

§ 1926.914

29 CFR Ch. XVII (7-1-11 Edition)

for each round shall be taken directly from the magazines to the blasting zone and immediately loaded. Detonators and explosives left over after loading a round shall be removed from the working chamber before the connecting wires are connected up.

(b) When detonators or explosives are brought into an air lock, no employee except the powderman, blaster, lock tender and the employees necessary for carrying, shall be permitted to enter the air lock. No other material, supplies, or equipment shall be locked through with the explosives.

(c) Detonators and explosives shall be taken separately into pressure working chambers.

(d) The blaster or powderman shall be responsible for the receipt, unloading, storage, and on-site transportation of explosives and detonators.

(e) All metal pipes, rails, air locks, and steel tunnel lining shall be electrically bonded together and grounded at or near the portal or shaft, and such pipes and rails shall be cross-bonded together at not less than 1,000-foot intervals throughout the length of the tunnel. In addition, each low air supply pipe shall be grounded at its delivery end.

(f) The explosives suitable for use in wet holes shall be water-resistant and shall be Fume Class 1.

(g) When tunnel excavation in rock face is approaching mixed face, and when tunnel excavation is in mixed face, blasting shall be performed with light charges and with light burden on each hole. Advance drilling shall be performed as tunnel excavation in rock face approaches mixed face, to determine the general nature and extent of rock cover and the remaining distance ahead to soft ground as excavation advances.

§ 1926.914 Definitions applicable to this subpart.

(a) *American Table of Distances* (also known as Quantity Distance Tables) means American Table of Distances for Storage of Explosives as revised and approved by the Institute of the Makers of Explosives, June 5, 1964.

(b) *Approved storage facility*—A facility for the storage of explosive materials conforming to the requirements of

this part and covered by a license or permit issued under authority of the Bureau of Alcohol, Tobacco and Firearms. (See 27 CFR part 55)

(c) *Blast area*—The area in which explosives loading and blasting operations are being conducted.

(d) *Blaster*—The person or persons authorized to use explosives for blasting purposes and meeting the qualifications contained in § 1926.901.

(e) *Blasting agent*—A blasting agent is any material or mixture consisting of a fuel and oxidizer used for blasting, but not classified an explosive and in which none of the ingredients is classified as an explosive provided the furnished (mixed) product cannot be detonated with a No. 8 test blasting cap when confined. A common blasting agent presently in use is a mixture of ammonium nitrate (NH₄ NO₃) and carbonaceous combustibles, such as fuel oil or coal, and may either be procured, premixed and packaged from explosives companies or mixed in the field.

(f) *Blasting cap*—A metallic tube closed at one end, containing a charge of one or more detonating compounds, and designed for and capable of detonation from the sparks or flame from a safety fuse inserted and crimped into the open end.

(g) *Block holing*—The breaking of boulders by firing a charge of explosives that has been loaded in a drill hole.

(h) *Conveyance*—Any unit for transporting explosives or blasting agents, including but not limited to trucks, trailers, rail cars, barges, and vessels.

(i) *Detonating cord*—A flexible cord containing a center core of high explosives which when detonated, will have sufficient strength to detonate other cap-sensitive explosives with which it is in contact.

(j) *Detonator*—Blasting caps, electric blasting caps, delay electric blasting caps, and nonelectric delay blasting caps.

(k) *Electric blasting cap*—A blasting cap designed for and capable of detonation by means of an electric current.

(l) *Electric blasting circuitry*—

(1) Bus wire. An expendable wire, used in parallel or series, in parallel circuits, to which are connected the leg wires of electric blasting caps.

(2) Connecting wire. An insulated expendable wire used between electric blasting caps and the leading wires or between the bus wire and the leading wires.

(3) Leading wire. An insulated wire used between the electric power source and the electric blasting cap circuit.

(4) Permanent blasting wire. A permanently mounted insulated wire used between the electric power source and the electric blasting cap circuit.

(m) *Electric delay blasting caps*—Caps designed to detonate at a predetermined period of time after energy is applied to the ignition system.

(n) *Explosives*—(1) Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion; that is, with substantially instantaneous release of gas and heat, unless such compound, mixture or device is otherwise specifically classified by the U.S. Department of Transportation.

(2) All material which is classified as Class A, Class B, and Class C Explosives by the U.S. Department of Transportation.

(3) Classification of explosives by the U.S. Department of Transportation is as follows:

Class A Explosives. Possessing detonating hazard, such as dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, black powder, blasting caps, and detonating primers.

Class B Explosives. Possessing flammable hazard, such as propellant explosives, including some smokeless propellants.

Class C Explosives. Include certain types of manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities.

(o) *Fuse lighters*—Special devices for the purpose of igniting safety fuse.

(p) *Magazine*—Any building or structure, other than an explosives manufacturing building, used for the storage of explosives.

(q) *Misfire*—An explosive charge which failed to detonate.

(r) *Mud-capping* (sometimes known as bulldozing, adobe blasting, or dobying). The blasting of boulders by placing a quantity of explosives against a rock, boulder, or other object without confining the explosives in a drill hole.

(s) *Nonelectric delay blasting cap*—A blasting cap with an integral delay ele-

ment in conjunction with and capable of being detonated by a detonator impulse or signal from miniaturized detonating cord.

(t) *Primary blasting*—The blasting operation by which the original rock formation is dislodged from its natural location.

(u) *Primer*—A cartridge or container of explosives into which a detonator or detonating cord is inserted or attached.

(v) *Safety fuse*—A flexible cord containing an internal burning medium by which fire is conveyed at a continuous and uniform rate for the purpose of firing blasting caps.

(w) *Secondary blasting*—The reduction of oversize material by the use of explosives to the dimension required for handling, including mudcapping and blockholing.

(x) *Stemming*—A suitable inert incombustible material or device used to confine or separate explosives in a drill hole, or to cover explosives in mud-capping.

(y) *Springing*—The creation of a pocket in the bottom of a drill hole by the use of a moderate quantity of explosives in order that larger quantities or explosives may be inserted therein.

(z) *Water gels, or slurry explosives*—A wide variety of materials used for blasting. They all contain substantial proportions of water and high proportions of ammonium nitrate, some of which is in solution in the water. Two broad classes of water gels are: (1) Those which are sensitized by a material classed as an explosive, such as TNT or smokeless powder, and (2) those which contain no ingredient classified as an explosive; these are sensitized with metals such as aluminum or with other fuels. Water gels may be premixed at an explosives plant or mixed at the site immediately before delivery into the bore hole.

(aa) *Semiconductive hose*. Semiconductive hose—a hose with an electrical resistance high enough to limit flow of stray electric currents to safe levels, yet not so high as to prevent drainage of static electric charges to ground; hose of not more than 2 megohms resistance over its entire

§ 1926.950

length and of not less than 5,000 ohms per foot meets the requirement.

[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 58 FR 35184 and 35311, June 30, 1993]

Subpart V—Power Transmission and Distribution

AUTHORITY: Section 3704 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701); Secs. 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order Nos. 12-71 (36 FR 8754); 8-76 (41 FR 25059); 9-83 (48 FR 35736, 1-90 (55 FR 9033), and 5-2007 (72 FR 31159). Section 1926.951 also issued under 29 CFR part 1911.

§ 1926.950 General requirements.

(a) *Application.* The occupational safety and health standards contained in this subpart V shall apply to the construction of electric transmission and distribution lines and equipment.

(1) As used in this subpart V the term "construction" includes the erection of new electric transmission and distribution lines and equipment, and the alteration, conversion, and improvement of existing electric transmission and distribution lines and equipment.

(2) Existing electric transmission and distribution lines and electrical equipment need not be modified to conform to the requirements of applicable standards in this subpart V, until such work as described in paragraph (a)(1) of this section is to be performed on such lines or equipment.

(3) The standards set forth in this subpart V provide minimum requirements for safety and health. Employers may require adherence to additional standards which are not in conflict with the standards contained in this subpart V.

(b) *Initial inspections, tests, or determinations.* (1) Existing conditions shall be determined before starting work, by an inspection or a test. Such conditions shall include, but not be limited to, energized lines and equipment, conditions of poles, and the location of circuits and equipment, including power and communication lines, CATV and fire alarm circuits.

(2) Electric equipment and lines shall be considered energized until deter-

29 CFR Ch. XVII (7-1-11 Edition)

mined to be deenergized by tests or other appropriate methods or means.

(3) Operating voltage of equipment and lines shall be determined before working on or near energized parts.

(c) *Clearances.* The provisions of paragraph (c) (1) or (2) of this section shall be observed.

(1) No employee shall be permitted to approach or take any conductive object without an approved insulating handle closer to exposed energized parts than shown in Table V-1, unless:

(i) The employee is insulated or guarded from the energized part (gloves or gloves with sleeves rated for the voltage involved shall be considered insulation of the employee from the energized part), or

(ii) The energized part is insulated or guarded from him and any other conductive object at a different potential, or

(iii) The employee is isolated, insulated, or guarded from any other conductive object(s), as during live-line bare-hand work.

(2) (i) The minimum working distance and minimum clear hot stick distances stated in Table V-1 shall not be violated. The minimum clear hot stick distance is that for the use of live-line tools held by linemen when performing live-line work.

(ii) Conductor support tools, such as link sticks, strain carriers, and insulator cradles, may be used: *Provided*, That the clear insulation is at least as long as the insulator string or the minimum distance specified in Table V-1 for the operating voltage.

TABLE V-1—ALTERNATING CURRENT—MINIMUM DISTANCES

Voltage range (phase to phase) kilovolt	Minimum working and clear hot stick distance
2.1 to 15	2 ft. 0 in.
15.1 to 35	2 ft. 4 in.
35.1 to 46	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121	3 ft. 4 in.
138 to 145	3 ft. 6 in.
161 to 169	3 ft. 8 in.
230 to 242	5 ft. 0 in.
345 to 362	¹ 7 ft. 0 in.
500 to 552	¹ 11 ft. 0 in.