

cated in by the last open crosscut and shall be kept at least 150 feet from pillar workings.

**(d) Adequate insulation and guard devices; promulgation of safety guidelines**

Trolley wires, trolley feeder wires, and bare signal wires shall be insulated adequately where they pass through doors and stoppings, and where they cross other power wires and cables. Trolley wires and trolley feeder wires shall be guarded adequately (1) at all points where men are required to work or pass regularly under the wires; (2) on both sides of all doors and stoppings; and (3) at man-trip stations. The Secretary or his authorized representatives shall specify other conditions where trolley wires and trolley feeder wires shall be adequately protected to prevent contact by any person, or shall require the use of improved methods to prevent such contact. Temporary guards shall be provided where trackmen and other persons work in proximity to trolley wires and trolley feeder wires.

(Pub. L. 91-173, title III, §310, Dec. 30, 1969, 83 Stat. 783.)

**§ 871. Fire protection**

**(a) Firefighting equipment; promulgation of minimum requirements for equipment; existing requirements; examinations after blasting**

Each coal mine shall be provided with suitable firefighting equipment adapted for the size and conditions of the mine. The Secretary shall establish minimum requirements for the type, quality, and quantity of such equipment, and the interpretations of the Secretary or the Director of the United States Bureau of Mines relating to such equipment in effect on the operative date of this subchapter shall continue in effect until modified or superseded by the Secretary. After every blasting operation, an examination shall be made to determine whether fires have been started.

**(b) Underground storage areas for lubricating oils and greases; construction; exceptions**

Underground storage places for lubricating oil and grease shall be of fireproof construction. Except for specially prepared materials approved by the Secretary, lubricating oil and grease kept in all underground areas in a coal mine shall be in fireproof, closed metal containers or other no less effective containers approved by the Secretary.

**(c) Housing of underground structures, stations, shops, and pumps; construction; ventilation**

Underground transformer stations, battery-charging stations, substations, compressor stations, shops, and permanent pumps shall be housed in fireproof structures or areas. Air currents used to ventilate structures or areas enclosing electrical installations shall be coursed directly into the return. Other underground structures installed in a coal mine as the Secretary may prescribe shall be of fireproof construction.

**(d) Use of arc or flame in underground mines; fireproof enclosures; operations outside fireproof enclosures; procedures; standards**

All welding, cutting, or soldering with arc or flame in all underground areas of a coal mine

shall, whenever practicable, be conducted in fireproof enclosures. Welding, cutting or soldering with arc or flame in other than a fireproof enclosure shall be done under the supervision of a qualified person who shall make a diligent search for fire during and after such operations and shall, immediately before and during such operations, continuously test for methane with means approved by the Secretary for detecting methane. Welding, cutting, or soldering shall not be conducted in air that contains 1.0 volume per centum or more of methane. Rock dust or suitable fire extinguishers shall be immediately available during such welding, cutting, or soldering.

**(e) Installation of fire suppression devices on unattended underground equipment; flame-resistant hydraulic fluids**

Within one year after the operative date of this subchapter, fire suppression devices meeting specifications prescribed by the Secretary shall be installed on unattended underground equipment and suitable fire-resistant hydraulic fluids approved by the Secretary shall be used in the hydraulic systems of such equipment. Such fluids shall be used in the hydraulic systems of other underground equipment unless fire suppression devices meeting specifications prescribed by the Secretary are installed on such equipment.

**(f) Deluge-type water sprays at main and secondary drives**

Deluge-type water sprays or foam generators automatically actuated by rise in temperature, or other no less effective means approved by the Secretary of controlling fire, shall be installed at main and secondary belt-conveyor drives. Where sprays or foam generators are used they shall supply a sufficient quantity of water or foam to control fires.

**(g) Installation of slippage and sequence switches on belt conveyors; fire suppression devices on belt haulageways**

Underground belt conveyors shall be equipped with slippage and sequence switches. The Secretary shall, within sixty days after the operative date of this subchapter, require that devices be installed on all such belts which will give a warning automatically when a fire occurs on or near such belt. The Secretary shall prescribe a schedule for installing fire suppression devices on belt haulageways.

**(h) Flame-resistant conveyor belt**

On and after the operative date of this subchapter, all conveyor belts acquired for use underground shall meet the requirements to be established by the Secretary for flame-resistant conveyor belts.

(Pub. L. 91-173, title III, §311, Dec. 30, 1969, 83 Stat. 783; Pub. L. 102-285, §10(b), May 18, 1992, 106 Stat. 172.)

REFERENCES IN TEXT

For the operative date of this subchapter, referred to subsecs. (a), (e), (g), and (h), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

CHANGE OF NAME

“United States Bureau of Mines” substituted for “Bureau of Mines” in subsec. (a) pursuant to section

10(b) of Pub. L. 102-285, set out as a note under section 1 of this title. For provisions relating to closure and transfer of functions of the United States Bureau of Mines, see Transfer of Functions note set out under section 1 of this title.

### § 872. Maps

#### (a) Fireproof repository; contents; certification

The operator of a coal mine shall have in a fireproof repository located in an area on the surface of the mine chosen by the mine operator to minimize the danger of destruction by fire or other hazard, an accurate and up-to-date map of such mine drawn on scale. Such map shall show the active workings, all pillared, worked out, and abandoned areas, except as provided in this section, entries and aircourses with the direction of airflow indicated by arrows, contour lines of all elevations, elevations of all main and cross or side entries, dip of the coalbed, escape-ways, adjacent mine workings within one thousand feet, mines above or below, water pools above, and either producing or abandoned oil and gas wells located within five hundred feet of such mine and any underground area of such mine, and such other information as the Secretary may require. Such map shall identify those areas of the mine which have been pillared, worked out, or abandoned which are inaccessible or cannot be entered safely and on which no information is available. Such map shall be made or certified by a registered engineer or a registered surveyor of the State in which the mine is located. Such map shall be kept up to date by temporary notations and such map shall be revised and supplemented at intervals prescribed by the Secretary on the basis of a survey made or certified by such engineer or surveyor.

#### (b) Availability for inspection; confidential copies

The coal mine map and any revision and supplement thereof shall be available for inspection by the Secretary or his authorized representative, by coal mine inspectors of the State in which the mine is located, by miners in the mine and their representatives and by operators of adjacent coal mines and by persons owning, leasing, or residing on surface areas of such mines or areas adjacent to such mines. The operator shall furnish to the Secretary or his authorized representative and to the Secretary of Housing and Urban Development, upon request, one or more copies of such map and any revision and supplement thereof. Such map or revision and supplement thereof shall be kept confidential and its contents shall not be divulged to any other person, except to the extent necessary to carry out the provisions of this chapter and in connection with the functions and responsibilities of the Secretary of Housing and Urban Development.

#### (c) Notification of mine closures; filing of revised and supplemental map; certification

Whenever an operator permanently closes or abandons a coal mine, or temporarily closes a coal mine for a period of more than ninety days, he shall promptly notify the Secretary of such closure. Within sixty days of the permanent closure or abandonment of the mine, or, when the

mine is temporarily closed, upon the expiration of a period of ninety days from the date of closure, the operator shall file with the Secretary a copy of the mine map revised and supplemented to the date of the closure. Such copy of the mine map shall be certified by a registered surveyor or registered engineer of the State in which the mine is located and shall be available for public inspection.

(Pub. L. 91-173, title III, §312, Dec. 30, 1969, 83 Stat. 785.)

#### REFERENCES IN TEXT

This chapter, referred to in subsec. (b), was in the original "this Act", meaning Pub. L. 91-173, Dec. 30, 1969, 83 Stat. 742, known as the Federal Mine Safety and Health Act of 1977, which is classified principally to this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 801 of this title and Tables.

### § 873. Blasting and explosives

#### (a) Limitations on storage and use of black powder and mudcaps

Black blasting powder shall not be stored or used underground. Mudcaps (adobes) or other unconfined shots shall not be fired underground.

#### (b) Storage of explosives and detonators; mudcaps in anthracite mines; restrictions; tests

Explosives and detonators shall be kept in separate containers until immediately before blasting. In underground anthracite mines, (1) mudcaps or other open, unconfined shake shots may be fired, if restricted to battery starting when methane or a fire hazard is not present, and if it is otherwise impracticable to start the battery; (2) open, unconfined shake shots in pitching veins may be fired, when no methane or fire hazard is present, if the taking down of loose hanging coal by other means is too hazardous; and (3) tests for methane shall be made immediately before such shots are fired and if 1.0 volume per centum or more of methane is present, when tested, such shot shall not be made until the methane content is reduced below 1.0 volume per centum.

#### (c) Permissible explosives, detonators, and devices; firing; stem boreholes; nonpermissible explosives; compressed air blasting

Except as provided in this subsection, in all underground areas of a coal mine only permissible explosives, electric detonators of proper strength, and permissible blasting devices shall be used and all explosives and blasting devices shall be used in a permissible manner. Permissible explosives shall be fired only with permissible shot firing units. Only incombustible materials shall be used for stemming boreholes. The Secretary may, under such safeguards as he may prescribe, permit the firing of more than twenty shots and allow the use of nonpermissible explosives in sinking shafts and slopes from the surface in rock. Nothing in this section shall prohibit the use of compressed air blasting.

#### (d) Container construction for carrying explosives or detonators in underground mines

Explosives or detonators carried anywhere underground in a coal mine by any person shall be in containers constructed of nonconductive ma-