

ative finds to be hazardous or cause a hazard to the miners in such mine.

(Pub. L. 91-173, title II, §206, Dec. 30, 1969, 83 Stat. 765; Pub. L. 96-88, title V, §509(b), Oct. 17, 1979, 93 Stat. 695.)

#### Editorial Notes

##### REFERENCES IN TEXT

For the operative date of this subchapter, referred to in text, see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

##### CODIFICATION

In text, “chapter 65 of title 41” substituted for “the Walsh-Healey Public Contracts Act, as amended” on authority of Pub. L. 111-350, §6(c), Jan. 4, 2011, 124 Stat. 3854, which Act amended Title 41, Public Contracts.

#### Statutory Notes and Related Subsidiaries

##### CHANGE OF NAME

“Secretary of Health and Human Services” substituted in text for “Secretary of Health, Education, and Welfare” pursuant to section 509(b) of Pub. L. 96-88 which is classified to section 3508(b) of Title 20, Education.

##### EFFECTIVE DATE

Section operative six months after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

#### SUBCHAPTER III—INTERIM MANDATORY SAFETY STANDARDS FOR UNDERGROUND COAL MINES

### § 861. Mandatory safety standards for underground mines

#### (a) Coverage; enforcement; review

The provisions of sections 862 through 878 of this title shall be interim mandatory safety standards applicable to all underground coal mines until superseded in whole or in part by improved mandatory safety standards promulgated by the Secretary under the provisions of section 811 of this title, and shall be enforced in the same manner and to the same extent as any mandatory safety standard promulgated under section 811 of this title. Any orders issued in the enforcement of the interim standards set forth in this subchapter shall be subject to review as provided in subchapter I of this chapter.

#### (b) Purpose; initiation of studies and research

The purpose of this subchapter is to provide for the immediate application of mandatory safety standards developed on the basis of experience and advances in technology and to prevent newly created hazards resulting from new technology in coal mining. The Secretary of the Interior in coordination with the Secretary shall immediately initiate studies, investigations, and research to further upgrade such standards and to develop and promulgate new and improved standards promptly that will provide increased protection to the miners, particularly in connection with hazards from trolley wires, trolley feeder wires, and signal wires, the splicing and use of trailing cables, and in connection with improvements in vulcanizing of

electric conductors, improvement in roof control measures, methane drainage in advance of mining, improved methods of measuring methane and other explosive gases and oxygen concentrations, and the use of improved underground equipment and other sources of power for such equipment.

(Pub. L. 91-173, title III, §301, Dec. 30, 1969, 83 Stat. 765; Pub. L. 95-164, title II, §203, Nov. 9, 1977, 91 Stat. 1317.)

#### Editorial Notes

##### AMENDMENTS

1977—Subsec. (b). Pub. L. 95-164, §203(a), substituted “The Secretary of the Interior in coordination with the Secretary shall immediately initiate studies” for “The Secretary shall immediately initiate studies”.

Subsecs. (c), (d). Pub. L. 95-164, §203(b), struck out subsec. (c) which related to the modification of standards, and subsec. (d) which related to the applicability of section 553 of title 5 in cases where the provisions of sections 862 to 878 of this title had provided that certain actions, conditions, or requirements be carried out as prescribed by the Secretary or the Secretary of Health, Education, and Welfare.

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95-164 effective 120 days after Nov. 9, 1977, except as otherwise provided, see section 307 of Pub. L. 95-164, set out as a note under section 801 of this title.

##### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

### § 862. Roof support

#### (a) Roof control plan; contents; review; availability

Each operator shall undertake to carry out on a continuing basis a program to improve the roof control system of each coal mine and the means and measures to accomplish such system. The roof and ribs of all active underground roadways, travelways, and working places shall be supported or otherwise controlled adequately to protect persons from falls of the roof or ribs. A roof control plan and revisions thereof suitable to the roof conditions and mining system of each coal mine and approved by the Secretary shall be adopted and set out in printed form within sixty days after the operative date of this subchapter. The plan shall show the type of support and spacing approved by the Secretary. Such plan shall be reviewed periodically, at least every six months by the Secretary, taking into consideration any falls of roof or ribs or inadequacy of support of roof or ribs. No person shall proceed beyond the last permanent support unless adequate temporary support is provided or unless such temporary support is not required under the approved roof control plan and the absence of such support will not pose a hazard to the miners. A copy of the plan shall be furnished the Secretary or his authorized representative and shall be available to the miners and their representatives.

**(b) Creation of dangers by roof falls**

The method of mining followed in any coal mine shall not expose the miner to unusual dangers from roof falls caused by excessive widths of rooms and entries or faulty pillar recovery methods.

**(c) Location and supply of roof support material; safety devices for roof work**

The operator, in accordance with the approved plan, shall provide at or near each working face and at such other locations in the coal mine as the Secretary may prescribe an ample supply of suitable materials of proper size with which to secure the roof of all working places in a safe manner. Safety posts, jacks, or other approved devices shall be used to protect the workmen when roof material is being taken down, cross-bars are being installed, roof bolt-holes are being drilled, roof bolts are being installed, and in such other circumstances as may be appropriate. Loose roof and overhanging or loose faces and ribs shall be taken down or supported. Except in the case of recovery work, supports knocked out shall be replaced promptly.

**(d) Roof bolts**

When installation of roof bolts is permitted, such roof bolts shall be tested in accordance with the approved roof control plan.

**(e) Recovery of roof bolts**

Roof bolts shall not be recovered where complete extractions of pillars are attempted, where adjacent to clay veins, or at the locations of other irregularities, whether natural or otherwise, that induce abnormal hazards. Where roof bolt recovery is permitted, it shall be conducted only in accordance with methods prescribed in the approved roof control plan, and shall be conducted by experienced miners and only where adequate temporary support is provided.

**(f) Safety inspections; correction of dangerous conditions**

Where miners are exposed to danger from falls of roof, face, and ribs the operator shall examine and test the roof, face, and ribs before any work or machine is started, and as frequently thereafter as may be necessary to insure safety. When dangerous conditions are found, they shall be corrected immediately.

(Pub. L. 91-173, title III, §302, Dec. 30, 1969, 83 Stat. 766.)

**Editorial Notes****REFERENCES IN TEXT**

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

**Statutory Notes and Related Subsidiaries****EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 863. Ventilation****(a) Equipment; approval; daily examinations**

All coal mines shall be ventilated by mechanical ventilation equipment installed and oper-

ated in a manner approved by an authorized representative of the Secretary and such equipment shall be examined daily and a record shall be kept of such examination.

**(b) Standards for air in work areas**

All active workings shall be ventilated by a current of air containing not less than 19.5 volume per centum of oxygen, not more than 0.5 volume per centum of carbon dioxide, and no harmful quantities of other noxious or poisonous gases; and the volume and velocity of the current of air shall be sufficient to dilute, render harmless, and to carry away, flammable, explosive, noxious, and harmful gases, and dust, and smoke and explosive fumes. The minimum quantity of air reaching the last open crosscut in any pair or set of developing entries and the last open crosscut in any pair or set of rooms shall be nine thousand cubic feet a minute, and the minimum quantity of air reaching the intake end of a pillar line shall be nine thousand cubic feet a minute. The minimum quantity of air in any coal mine reaching each working face shall be three thousand cubic feet a minute. Within three months after the operative date of this subchapter, the Secretary shall prescribe the minimum velocity and quantity of air reaching each working face of each coal mine in order to render harmless and carry away methane and other explosive gases and to reduce the level of respirable dust to the lowest attainable level. The authorized representative of the Secretary may require in any coal mine a greater quantity and velocity of air when he finds it necessary to protect the health or safety of miners. Within one year after the operative date of this subchapter, the Secretary or his authorized representative shall prescribe the maximum respirable dust level in the intake aircourses in each coal mine in order to reduce such level to the lowest attainable level. In robbing areas of anthracite mines, where the air currents cannot be controlled and measurements of the air cannot be obtained, the air shall have perceptible movement.

**(c) Line brattice; functions; exceptions; repairs; flame resistant material**

(1) Properly installed and adequately maintained line brattice or other approved devices shall be continuously used from the last open crosscut of an entry or room of each working section to provide adequate ventilation to the working faces for the miners and to remove flammable, explosive, and noxious gases, dust, and explosive fumes, unless the Secretary or his authorized representative permits an exception to this requirement, where such exception will not pose a hazard to the miners. When damaged by falls or otherwise, such line brattice or other devices shall be repaired immediately.

(2) The space between the line brattice or other approved device and the rib shall be large enough to permit the flow of a sufficient volume and velocity of air to keep the working face clear of flammable, explosive, and noxious gases, dust, and explosive fumes.

(3) Brattice cloth used underground shall be of flame-resistant material.

**(d) Pre-shift examinations and tests; scope; violations of mandatory standards; notification; posting of "DANGER" signs; restriction of entry; records; re-entry**

(1) Within three hours immediately preceding the beginning of any shift, and before any miner in such shift enters the active workings of a coal mine, certified persons designated by the operator of the mine shall examine such workings and any other underground area of the mine designated by the Secretary or his authorized representative. Each such examiner shall examine every working section in such workings and shall make tests in each such working section for accumulations of methane with means approved by the Secretary for detecting methane and shall make tests for oxygen deficiency with a permissible flame safety lamp or other means approved by the Secretary; examine seals and doors to determine whether they are functioning properly; examine and test the roof, face, and rib conditions in such working section; examine active roadways, travelways, and belt conveyors on which men are carried, approaches to abandoned areas, and accessible falls in such section for hazards; test by means of an anemometer or other device approved by the Secretary to determine whether the air in each split is traveling in its proper course and in normal volume and velocity; and examine for such other hazards and violations of the mandatory health or safety standards, as an authorized representative of the Secretary may from time to time require. Belt conveyors on which coal is carried shall be examined after each coal-producing shift has begun. Such mine examiner shall place his initials and the date and time at all places he examines. If such mine examiner finds a condition which constitutes a violation of a mandatory health or safety standard or any condition which is hazardous to persons who may enter or be in such area, he shall indicate such hazardous place by posting a "DANGER" sign conspicuously<sup>1</sup> at all points which persons entering such hazardous place would be required to pass, and shall notify the operator of the mine. No person, other than an authorized representative of the Secretary or a State mine inspector or persons authorized by the operator to enter such place for the purpose of eliminating the hazardous condition therein, shall enter such place while such sign is so posted. Upon completing his examination, such mine examiner shall report the results of his examination to a person, designated by the operator to receive such reports at a designated station on the surface of the mine, before other persons enter the underground areas of such mine to work in such shift. Each such mine examiner shall also record the results of his examination with ink or indelible pencil in a book approved by the Secretary kept for such purpose in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and the record shall be open for inspection by interested persons.

(2) No person (other than certified persons designated under this subsection) shall enter any underground area, except during any shift, un-

less an examination of such area as prescribed in this subsection has been made within eight hours immediately preceding his entrance into such area.

**(e) Daily examinations and tests; scope; imminent danger; withdrawal of persons; abatement of danger**

At least once during each coal-producing shift, or more often if necessary for safety, each working section shall be examined for hazardous conditions by certified persons designated by the operator to do so. Any such condition shall be corrected immediately. If such condition creates an imminent danger, the operator shall withdraw all persons from the area affected by such condition to a safe area, except those persons referred to in section 814(d) of this title, until the danger is abated. Such examination shall include tests for methane with a means approved by the Secretary for detecting methane and for oxygen deficiency with a permissible flame safety lamp or other means approved by the Secretary.

**(f) Weekly examination for hazardous conditions; scope; notification; repairs; imminent danger; withdrawal of persons; abatement; records**

In addition to the pre-shift and daily examinations required by this section, examinations for hazardous conditions, including tests for methane, and for compliance with the mandatory health or safety standards, shall be made at least once each week by a certified person designated by the operator in the return of each split of air where it enters the main return, on pillar falls, at seals, in the main return, at least one entry of each intake and return aircourse in its entirety, idle workings, and, insofar as safety considerations permit, abandoned areas. Such weekly examination need not be made during any week in which the mine is idle for the entire week, except that such examination shall be made before any other miner returns to the mine. The person making such examinations and tests shall place his initials and the date and time at the places examined, and if any hazardous condition is found, such condition shall be reported to the operator promptly. Any hazardous condition shall be corrected immediately. If such condition creates an imminent danger, the operator shall withdraw all persons from the area affected by such condition to a safe area, except those persons referred to in section 814(d) of this title, until such danger is abated. A record of these examinations, tests, and actions taken shall be recorded in ink or indelible pencil in a book approved by the Secretary kept for such purpose 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, and the record shall be open for inspection by interested persons.

**(g) Weekly ventilation examinations; scope; records**

At least once each week, a qualified person shall measure the volume of air entering the main intakes and leaving the main returns, the volume passing through the last open crosscut in any pair or set of developing entries and the

<sup>1</sup> So in original. Probably should be "conspicuously".

last open crosscut in any pair or set of rooms, the volume and, when the Secretary so prescribes, the velocity reaching each working face, the volume being delivered to the intake end of each pillar line, and the volume at the intake and return of each split of air. A record of such measurements shall be recorded in ink or indelible pencil in a book approved by the Secretary kept for such purpose in an area on the surface of the coal mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and the record shall be open for inspection by interested persons.

**(h) Methane examinations at working place; periodic intervals; standards; procedures for different air contents of methane**

(1) At the start of each shift, tests for methane shall be made at each working place immediately before electrically operated equipment is energized. Such tests shall be made by qualified persons. If 1.0 volume per centum or more of methane is detected, electrical equipment shall not be energized, taken into, or operated in, such working place until the air therein contains less than 1.0 volume per centum of methane. Examinations for methane shall be made during the operation of such equipment at intervals of not more than twenty minutes during each shift, unless more frequent examinations are required by an authorized representative of the Secretary. In conducting such tests, such person shall use means approved by the Secretary for detecting methane.

(2) If at any time the air at any working place, when tested at a point not less than twelve inches from the roof, face, or rib, contains 1.0 volume per centum or more of methane, changes or adjustments shall be made at once in the ventilation in such mine so that such air shall contain less than 1.0 volume per centum of methane. While such changes or adjustments are underway and until they have been achieved, power to electric face equipment located in such place shall be cut off, no other work shall be permitted in such place, and due precautions shall be carried out under the direction of the operator or his agent so as not to endanger other areas of the mine. If at any time such air contains 1.5 volume per centum or more of methane, all persons, except those referred to in section 814(d) of this title, shall be withdrawn from the area of the mine endangered thereby to a safe area, and all electric power shall be cut off from the endangered area of the mine, until the air in such working place shall contain less than 1.0 volume per centum of methane.

**(i) Methane examination of air returning from working section; periodic intervals; standards; procedures for different air contents; virgin territory**

(1) If, when tested, a split of air returning from any working section contains 1.0 volume per centum or more of methane, changes or adjustments shall be made at once in the ventilation in the mine so that such returning air shall contain less than 1.0 volume per centum of methane. Tests under this paragraph and paragraph (2) of this subsection shall be made at four-hour intervals during each shift by a qualified person designated by the operator of the mine. In mak-

ing such tests, such person shall use means approved by the Secretary for detecting methane.

(2) If, when tested, a split of air returning from any working section contains 1.5 volume per centum or more of methane, all persons, except those persons referred to in section 814(d) of this title, shall be withdrawn from the area of the mine endangered thereby to a safe area and all electric power shall be cut off from the endangered area of the mine, until the air in such split shall contain less than 1.0 volume per centum of methane.

(3) In virgin territory, if the quantity of air in a split ventilating the active workings in such territory equals or exceeds twice the minimum volume of air prescribed in subsection (b) of this section for the last open crosscut, if the air in the split returning from such workings does not pass over trolley wires or trolley feeder wires, and if a certified person designated by the operator is continually testing the methane content of the air in such split during mining operations in such workings, it shall be necessary to withdraw all persons, except those referred to in section 814(d) of this title, from the area of the mine endangered thereby to a safe area and all electric power shall be cut off from the endangered area only when the air returning from such workings contains 2.0 volume per centum or more of methane.

**(j) Abandoned area air; pre-shift examination**

Air which has passed by an opening of any abandoned area shall not be used to ventilate any working place in the coal mine if such air contains 0.25 volume per centum or more of methane. Examinations of such air shall be made during the pre-shift examination required by subsection (d) of this section. In making such tests, a certified person designated by the operator shall use means approved by the Secretary for detecting methane. For the purposes of this subsection, an area within a panel shall not be deemed to be abandoned until such panel is abandoned.

**(k) Abandoned area air; inaccessible or unsafe for inspection; air from where pillars have been removed**

Air that has passed through an abandoned area or an area which is inaccessible or unsafe for inspection shall not be used to ventilate any working place in any mine. No air which has been used to ventilate an area from which the pillars have been removed shall be used to ventilate any working place in a mine, except that such air, if it does not contain 0.25 volume per centum or more of methane, may be used to ventilate enough advancing working places immediately adjacent to the line of retreat to maintain an orderly sequence of pillar recovery on a set of entries.

**(l) Methane monitors; required equipment; maintenance; warnings; deenergizing of equipment**

The Secretary or his authorized representative shall require, as an additional device for detecting concentrations of methane, that a methane monitor, approved as reliable by the Secretary after the operative date of this subchapter, be installed, when available, on any electric face

cutting equipment, continuous miner, longwall face equipment, and loading machine, except that no monitor shall be required to be installed on any such equipment prior to the date on which such equipment is required to be permissible under section 865(a) of this title. When installed on any such equipment, such monitor shall be kept operative and properly maintained and frequently tested as prescribed by the Secretary. The sensing device of such monitor shall be installed as close to the working face as practicable. Such monitor shall be set to deenergize automatically such equipment when such monitor is not operating properly and to give a warning automatically when the concentration of methane reaches a maximum percentage determined by an authorized representative of the Secretary which shall not be more than 1.0 volume per centum of methane. An authorized representative of the Secretary shall require such monitor to deenergize automatically equipment on which it is installed when the concentration of methane reaches a maximum percentage determined by such representative which shall not be more than 2.0 volume per centum of methane.

**(m) Idle area inspections; authorized inspectors**

Idle and abandoned areas shall be inspected for methane and for oxygen deficiency and other dangerous conditions by a certified person with means approved by the Secretary as soon as possible but not more than three hours before other persons are permitted to enter or work in such areas. Persons, such as pumpmen, who are required regularly to enter such areas in the performance of their duties, and who are trained and qualified in the use of means approved by the Secretary for detecting methane and in the use of a permissible flame safety lamp or other means approved by the Secretary for detecting oxygen deficiency are authorized to make such examinations for themselves, and each such person shall be properly equipped and shall make such examinations upon entering any such area.

**(n) Intentional roof falls; prior inspections; safeguards**

Immediately before an intentional roof fall is made, pillar workings shall be examined by a qualified person designated by the operator to ascertain whether methane is present. Such person shall use means approved by the Secretary for detecting methane. If in such examination methane is found in amounts of 1.0 volume per centum or more, such roof fall shall not be made until changes or adjustments are made in the ventilation so that the air shall contain less than 1.0 volume per centum of methane.

**(o) Methane and dust control plans; contents**

A ventilation system and methane and dust control plan and revisions thereof suitable to the conditions and the mining system of the coal mine and approved by the Secretary shall be adopted by the operator and set out in printed form within ninety days after the operative date of this subchapter. The plan shall show the type and location of mechanical ventilation equipment installed and operated in the mine, such additional or improved equipment as the Secretary may require, the quantity and velocity of air reaching each working face, and such

other information as the Secretary may require. Such plan shall be reviewed by the operator and the Secretary at least every six months.

**(p) Devices for detection of methane and oxygen deficiency; maintenance**

Each operator shall provide for the proper maintenance and care of the permissible flame safety lamp or any other approved device for detecting methane and oxygen deficiency by a person trained in such maintenance, and, before each shift, care shall be taken to insure that such lamp or other device is in a permissible condition.

**(q) Pillar recovery; areas without bleeder systems**

Where areas are being pillared on the operative date of this subchapter without bleeder entries, or without bleeder systems or an equivalent means, pillar recovery may be completed in the area, to the extent approved by an authorized representative of the Secretary, if the edges of pillar lines adjacent to active workings are ventilated with sufficient air to keep the air in open areas along the pillar lines below 1.0 volume per centum of methane.

**(r) Overcast and undercast intake air split requirements; time extension**

Each mechanized mining section shall be ventilated with a separate split of intake air directed by overcasts, undercasts, or the equivalent, except an extension of time, not in excess of nine months, may be permitted by the Secretary, under such conditions as he may prescribe, whenever he determines that this subsection cannot be complied with on the operative date of this subchapter.

**(s) Blasting; prior and subsequent examinations for methane**

In all underground areas of a coal mine, immediately before firing each shot or group of multiple shots and after blasting is completed, examinations for methane shall be made by a qualified person with means approved by the Secretary for detecting methane. If methane is found in amounts of 1.0 volume per centum or more, changes or adjustments shall be made at once in the ventilation so that the air shall contain less than 1.0 volume per centum of methane. No shots shall be fired until the air contains less than 1.0 volume per centum of methane.

**(t) Mine fan stop plans; requisites**

Each operator shall adopt a plan within sixty days after the operative date of this subchapter which shall provide that when any mine fan stops, immediate action shall be taken by the operator or his agent (1) to withdraw all persons from the working sections, (2) to cut off the power in the mine in a timely manner, (3) to provide for restoration of power and resumption of work if ventilation is restored within a reasonable period as set forth in the plan after the working places and other active workings where methane is likely to accumulate are reexamined by a certified person to determine if methane in amounts of 1.0 volume per centum or more exists therein, and (4) to provide for withdrawal of all persons from the mine if ventilation cannot

be restored within such reasonable time. The plan and revisions thereof approved by the Secretary shall be set out in printed form and a copy shall be furnished to the Secretary or his authorized representative.

**(u) Modifications affecting main air current or any split; withdrawal of personnel; removal of power**

Changes in ventilation which materially affect the main air current or any split thereof and which may affect the safety of persons in the coal mine shall be made only when the mine is idle. Only those persons engaged in making such changes shall be permitted in the mine during the change. Power shall be removed from the areas affected by the change before work starts to make the change and shall not be restored until the effect of the change has been ascertained and the affected areas determined to be safe by a certified person.

**(v) Reading and countersigning of daily and weekly reports; foreman; superintendent**

The mine foreman shall read and countersign promptly the daily reports of the pre-shift examiner and assistant mine foremen, and he shall read and countersign promptly the weekly report covering the examinations for hazardous conditions. Where such reports disclose hazardous conditions, they shall be corrected promptly. If such conditions create an imminent danger, the operator shall withdraw all persons from, or prevent any person from entering, as the case may be, the area affected by such conditions, except those persons referred to in section 814(d) of this title, until such danger is abated. The mine superintendent or assistant superintendent of the mine shall also read and countersign the daily and weekly reports of such persons.

**(w) Daily mine condition reports; requisites; signatures**

Each day, the mine foreman and each of his assistants shall enter plainly and sign with ink or indelible pencil in a book approved by the Secretary provided for that purpose a report of the condition of the mine or portion thereof under his supervision, which report shall state clearly the location and nature of any hazardous condition observed by him or reported to him during the day and what action was taken to remedy such condition. Such book shall be kept in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard, and shall be open for inspection by interested persons.

**(x) Reopening of abandoned or declared inactive mine; notification; inspection**

Before a coal mine is reopened after having been abandoned or declared inactive by the operator, the Secretary shall be notified, and an inspection shall be made of the entire mine by an authorized representative of the Secretary before mining operations commence.

**(y) Separation of intake and return aircourses from belt haulage entries; standards**

(1) In any coal mine opened after the operative date of this subchapter, the entries used as intake and return aircourses shall be separated

from belt haulage entries, and each operator of such mine shall limit the velocity of the air coursed through belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries, and to insure that the air therein shall contain less than 1.0 volume per centum of methane, and such air shall not be used to ventilate active working places. Whenever an authorized representative of the Secretary finds, in the case of any coal mine opened on or prior to the operative date of this subchapter which has been developed with more than two entries, that the conditions in the entries, other than belt haulage entries, are such as to permit adequately the coursing of intake or return air through such entries, (1) the belt haulage entries shall not be used to ventilate, unless such entries are necessary to ventilate, active working places, and (2) when the belt haulage entries are not necessary to ventilate the active working places, the operator of such mine shall limit the velocity of the air coursed through the belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries, and to insure that the air therein shall contain less than 1.0 volume per centum of methane.

(2) In any coal mine opened on or after the operative date of this subchapter, or, in the case of a coal mine opened prior to such date, in any new working section of such mine, where trolley haulage systems are maintained and where trolley wires or trolley feeder wires are installed, an authorized representative of the Secretary shall require a sufficient number of entries or rooms as intake aircourses in order to limit, as prescribed by the Secretary, the velocity of air currents on such haulageways for the purpose of minimizing the hazards associated with fires and dust explosions in such haulageways.

**(z) Pillar extractions; bleeder systems and sealing requirements; standards**

(1) While pillars are being extracted in any area of a coal mine, such area shall be ventilated in the manner prescribed by this section.

(2) Within nine months after the operative date of this subchapter, all areas from which pillars have been wholly or partially extracted and abandoned areas, as determined by the Secretary or his authorized representative, shall be ventilated by bleeder entries or by bleeder systems or equivalent means, or be sealed, as determined by the Secretary or his authorized representative. When ventilation of such areas is required, such ventilation shall be maintained so as continuously to dilute, render harmless, and carry away methane and other explosive gases within such areas and to protect the active workings of the mine from the hazards of such methane and other explosive gases. Air coursed through underground areas from which pillars have been wholly or partially extracted which enters another split of air shall not contain more than 2.0 volume per centum of methane, when tested at the point it enters such other split. When sealing is required, such seals shall be made in an approved manner so as to isolate with explosion-proof bulkheads such areas from the active workings of the mine.

(3) In the case of mines opened on or after the operative date of this subchapter, or in the case

of working sections opened on or after such date in mines opened prior to such date, the mining system shall be designed in accordance with a plan and revisions thereof approved by the Secretary and adopted by such operator so that, as each working section of the mine is abandoned, it can be isolated from the active workings of the mine with explosion-proof seals or bulkheads.

(Pub. L. 91-173, title III, §303, Dec. 30, 1969, 83 Stat. 767.)

#### Editorial Notes

##### REFERENCES IN TEXT

For the operative date of this subchapter, referred to in subsecs. (b), (l), (o), (q), (r), (t), (y), and (z)(2), (3), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

##### BELT HAULAGE ENTRIES FOR VENTILATION

Pub. L. 110-161, div. G, title I, §112(a), Dec. 26, 2007, 121 Stat. 2168, provided that: "Not later than June 20, 2008, the Secretary of Labor shall propose regulations pursuant to section 303(y) of the Federal Mine Safety and Health Act of 1977 [30 U.S.C. 863(y)], consistent with the recommendations of the Technical Study Panel established pursuant to section 11 of the Mine Improvement and New Emergency Response (MINER) Act (Public Law 109-236) [enacting section 963 of this title], to require that in any coal mine, regardless of the date on which it was opened, belt haulage entries not be used to ventilate active working places without prior approval from the Assistant Secretary. Further, a mine ventilation plan incorporating the use of air coursed through belt haulage entries to ventilate active working places shall not be approved until the Assistant Secretary has reviewed the elements of the plan related to the use of belt air and determined that the plan at all times affords at least the same measure of protection where belt haulage entries are not used to ventilate working places. The Secretary shall finalize the regulations not later than December 31, 2008."

#### § 864. Combustible materials and rock dusting

##### (a) Accumulations; maintenance

Coal dust, including float coal dust deposited on rock-dusted surfaces, loose coal, and other combustible materials, shall be cleaned up and not be permitted to accumulate in active workings, or on electric equipment therein.

##### (b) Abatement of hazards in active working areas

Where underground mining operations in active workings create or raise excessive amounts of dust, water or water with a wetting agent added to it, or other no less effective methods approved by the Secretary or his authorized representative, shall be used to abate such dust. In working places, particularly in distances less than forty feet from the face, water, with or without a wetting agent, or other no less effective methods approved by the Secretary or his authorized representative, shall be applied to coal dust on the ribs, roof, and floor to reduce

dispersibility and to minimize the explosion hazard.

##### (c) Rock dusting of all areas of underground mines; exceptions

All underground areas of a coal mine, except those areas in which the dust is too wet or too high in incombustible content to propagate an explosion, shall be rock dusted to within forty feet of all working faces, unless such areas are inaccessible or unsafe to enter or unless the Secretary or his authorized representative permits an exception upon his finding that such exception will not pose a hazard to the miners. All crosscuts that are less than forty feet from a working face shall also be rock dusted.

##### (d) Distribution of rock dust; places, quantities

Where rock dust is required to be applied, it shall be distributed upon the top, floor, and sides of all underground areas of a coal mine and maintained in such quantities that the incombustible content of the combined coal dust, rock dust, and other dust shall be not less than 65 per centum, but the incombustible content in the return aircourses shall be no less than 80 per centum. Where methane is present in any ventilating current, the per centum of incombustible content of such combined dusts shall be increased 1.0 and 0.4 per centum for each 0.1 per centum of methane where 65 and 80 per centum, respectively, of incombustibles are required.

##### (e) Limitation of applicability

Subsections (b) through (d) of this section shall not apply to underground anthracite mines.

(Pub. L. 91-173, title III, §304, Dec. 30, 1969, 83 Stat. 774.)

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

#### § 865. Electrical equipment

##### (a) Allowable equipment; replacements; maintenance; permits for noncompliance; renewals; limitations; list of electric face equipment; survey of new and rebuilt equipment; publication of results

(1) Effective one year after the operative date of this subchapter—

(A) all junction or distribution boxes used for making multiple power connections inby the last open crosscut shall be permissible;

(B) all handheld electric drills, blower and exhaust fans, electric pumps, and such other low horsepower electric face equipment as the Secretary may designate within two months after the operative date of this subchapter which are taken into or used inby the last open crosscut of any coal mine shall be permissible;

(C) all electric face equipment which is taken into or used inby the last open crosscut of any coal mine classified under any provision of law as gassy prior to the operative date of this subchapter shall be permissible; and

(D) all other electric face equipment which is taken into or used in by the last crosscut of any coal mine, except a coal mine referred to in paragraph (2) of this subsection, which has not been classified under any provision of law as a gassy mine prior to the operative date of this subchapter shall be permissible.

(2) Effective four years after the operative date of this subchapter, all electric face equipment, other than equipment referred to in paragraph (1)(B) of this subsection, which is taken into or used in by the last open crosscut of any coal mine which is operated entirely in coal seams located above the watertable and which has not been classified under any provision of law as a gassy mine prior to the operative date of this subchapter and in which one or more openings were made prior to December 30, 1969, shall be permissible, except that any operator of such mine who is unable to comply with the provisions of this paragraph on such effective date may file with the Panel an application for a permit for noncompliance ninety days prior to such date. If the Panel determines, after notice to all interested persons and an opportunity for a public hearing under section 804 of this title, that such application satisfies the provisions of paragraph (10) of this subsection and that such operator, despite his diligent efforts, will be unable to comply with such provisions, the Panel may issue to such operator such a permit. Such permit shall entitle the permittee to an additional extension of time to comply with the provisions of this paragraph of not to exceed twenty-four months, as determined by the Panel, from such effective date.

(3) The operator of each coal mine shall maintain in permissible condition all electric face equipment required by this subsection to be permissible which is taken into or used in by the last open crosscut of any such mine.

(4) Each operator of a coal mine shall, within two months after the operative date of this subchapter, file with the Secretary a statement listing all electric face equipment by type and manufacturer being used by such operator in connection with mining operations in such mine as of the date of such filing, and stating whether such equipment is permissible and maintained in permissible condition or is nonpermissible on such date of filing, and, if nonpermissible, whether such nonpermissible equipment has ever been rated as permissible, and such other information as the Secretary may require.

(5) The Secretary shall promptly conduct a survey as to the total availability of new or rebuilt permissible electric face equipment and replacement parts for such equipment and, within six months after the operative date of this subchapter, publish the results of such survey.

(6) Any operator of a coal mine who is unable to comply with the provisions of paragraph (1)(D) of this subsection within one year after the operative date of this subchapter may file with the Panel an application for a permit for noncompliance. If the Panel determines that such application satisfies the provisions of paragraph (10) of this subsection, the Panel shall issue to such operator a permit for noncompliance. Such permit shall entitle the permittee to an extension of time to comply with such provi-

sions of paragraph (1)(D) of not to exceed twelve months, as determined by the Panel, from the date that compliance with the provisions of paragraph (1)(D) of this subsection is required.

(7) Any operator of a coal mine issued a permit under paragraph (6) of this subsection who, ninety days prior to the termination of such permit, or renewal thereof, determines that he will be unable to comply with the provisions of paragraph (1)(D) of this subsection upon the expiration of such permit may file with the Panel an application for renewal thereof. Upon receipt of such application, the Panel, if it determines, after notice to all interested persons and an opportunity for a public hearing under section 804 of this title, that such application satisfies the provisions of paragraph (10) of this subsection and that such operator, despite his diligent efforts, will be unable to comply with the provisions of paragraph (1)(D), may renew the permit for a period not exceeding twelve months.

(8) Any permit or renewal thereof issued pursuant to this subsection shall entitle the permittee to use such nonpermissible electric face equipment specified in the permit during the term of such permit.

(9) Permits for noncompliance issued under paragraphs (6) or (7) of this subsection shall, in the aggregate, not extend the period of noncompliance more than forty-eight months after December 30, 1969.

(10) Any application for a permit of noncompliance filed under this subsection shall contain a statement by the operator—

(A) that he is unable to comply with paragraph (1)(D) or paragraph (2) of this subsection, as appropriate, within the time prescribed;

(B) listing the nonpermissible electric face equipment being used by such operator in connection with mining operations in such mine on the operative date of this subchapter and the date of the application by type and manufacturer for which a noncompliance permit is requested and whether such equipment had ever been rated as permissible;

(C) setting forth the actions taken from and after the operative date of this subchapter to comply with paragraph (1)(D) or paragraph (2) of this subsection, as appropriate, together with a plan setting forth a schedule of compliance with said paragraphs for each such equipment referred to in such paragraphs and being used by the operator in connection with mining operations in such mine with respect to which such permit is requested and the means and measures to be employed to achieve compliance; and

(D) including such other information as the Panel may require.

(11) No permit for noncompliance shall be issued under this subsection for any nonpermissible electric face equipment, unless such equipment was being used by an operator in connection with the mining operations in a coal mine on the operative date of this subchapter.

(12) Effective one year after the operative date of this subchapter, all replacement equipment acquired for use in any mine referred to in this subsection shall be permissible and shall be maintained in a permissible condition, and in



the event of any major overhaul of any item of equipment in use one year from the operative date of this subchapter such equipment shall be put in, and thereafter maintained in, a permissible condition, unless, in the opinion of the Secretary, such equipment or necessary replacement parts are not available.

**(b) Notification of permits**

A copy of any permit granted under this section shall be mailed immediately to a representative of the miners of the mine to which it pertains, and to the public official or agency of the State charged with administering State laws relating to coal mine health and safety in such mine.

**(c) Gassy mines; maintenance of equipment**

Any coal mine which, prior to the operative date of this subchapter, was classed gassy under any provision of law and was required to use permissible electric face equipment and to maintain such equipment in a permissible condition shall continue to use such equipment and to maintain such equipment in such condition.

**(d) Location of nonpermissible power connection units**

All power-connection points, except where permissible power connection units are used, outby the last open crosscut shall be in intake air.

**(e) Mine map; contents; modifications**

The location and the electrical rating of all stationary electric apparatus in connection with the mine electric system, including permanent cables, switchgear, rectifying substations, transformers, permanent pumps and trolley wires and trolley feeder wires, and settings of all direct-current circuit breakers protecting underground trolley circuits, shall be shown on a mine map. Any changes made in a location, electric rating, or setting shall be promptly shown on the map when the change is made. Such map shall be available to an authorized representative of the Secretary and to the miners in such mine.

**(f) Repairs; deenergizing of equipment; authorized personnel; locking out of disconnection devices**

All power circuits and electric equipment shall be deenergized before work is done on such circuits and equipment, except when necessary for trouble shooting or testing. In addition, energized trolley wires may be repaired only by a person trained to perform electrical work and to maintain electrical equipment and the operator of such mine shall require that such person wear approved and tested insulated shoes and wireman's gloves. No electrical work shall be performed on low-, medium-, or high-voltage distribution circuits or equipment, except by a qualified person or by a person trained to perform electrical work and to maintain electrical equipment under the direct supervision of a qualified person. Disconnecting devices shall be locked out and suitably tagged by the persons who performed such work, except that, in cases where locking out is not possible, such devices shall be opened and suitably tagged by such persons. Locks or tags shall be removed only by the persons who installed them or, if such persons are unavailable, by persons authorized by the operator or his agent.

**(g) Periodic examinations; maintenance; records; accessibility**

All electric equipment shall be frequently examined, tested, and properly maintained by a qualified person to assure safe operating conditions. When a potentially dangerous condition is found on electric equipment, such equipment shall be removed from service until such condition is corrected. A record of such examinations shall be kept and made available to an authorized representative of the Secretary and to the miners in such mine.

**(h) Electrical conductors**

All electric conductors shall be sufficient in size and have adequate current-carrying capacity and be of such construction that a rise in temperature resulting from normal operation will not damage the insulating materials.

**(i) Electrical connections**

All electrical connections or splices in conductors shall be mechanically and electrically efficient, and suitable connectors shall be used. All electrical connections or splices in insulated wire shall be reinsulated at least to the same degree of protection as the remainder of the wire.

**(j) Cables and wires; entry through metal frames**

Cables shall enter metal frames of motors, splice boxes, and electric compartments only through proper fittings. When insulated wires other than cables pass through metal frames the holes shall be substantially bushed with insulated bushings.

**(k) Support of power wires**

All power wires (except trailing cables on mobile equipment, specially designed cables conducting high-voltage power to underground rectifying equipment or transformers, or bare or insulated ground and return wires) shall be supported on well-insulated insulators and shall not contact combustible material, roof, or ribs.

**(l) Insulation of power wires; exceptions**

Power wires and cables, except trolley wires, trolley feeder wires, and bare signal wires, shall be insulated adequately and fully protected.

**(m) Circuit breakers; overload protection for three-phase motors**

Automatic circuit-breaking devices or fuses of the correct type and capacity shall be installed so as to protect all electric equipment and circuits against short circuit and overloads. Three-phase motors on all electric equipment shall be provided with overload protection that will deenergize all three phases in the event that any phase is overloaded.

**(n) Disconnecting switches for main power circuits; location and installation**

In all main power circuits, disconnecting switches shall be installed underground within five hundred feet of the bottoms of shafts and boreholes through which main power circuits enter the underground area of the mine and within five hundred feet of all other places where main power circuits enter the underground area of the mine.

**(o) Switches**

All electric equipment shall be provided with switches or other controls that are safely designed, constructed, and installed.

**(p) Lightning arresters**

Each ungrounded, exposed power conductor that leads underground shall be equipped with suitable lightning arresters of approved type within one hundred feet of the point where the circuit enters the mine. Lightning arresters shall be connected to a low resistance grounding medium on the surface which shall be separated from neutral grounds by a distance of not less than twenty-five feet.

**(q) Nonapproved devices**

No device for the purpose of lighting any coal mine which has not been approved by the Secretary or his authorized representative shall be permitted in such mine.

**(r) Deenergizing of electric face equipment**

An authorized representative of the Secretary may require in any mine that electric face equipment be provided with devices that will permit the equipment to be deenergized quickly in the event of an emergency.

(Pub. L. 91-173, title III, §305, Dec. 30, 1969, 83 Stat. 775.)

**Editorial Notes****REFERENCES IN TEXT**

For the operative date of this subchapter, referred to in subsecs. (a)(1), (2), (4) to (6), (10)(B), (C), (11), (12), and (c), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

**Statutory Notes and Related Subsidiaries****EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 866. Trailing cables****(a) Requirements established for flame resistant cables**

Trailing cables used in coal mines shall meet the requirements established by the Secretary for flame-resistant cables.

**(b) Circuit breakers; markings and visual observation of position of disconnection devices**

Short-circuit protection for trailing cables shall be provided by an automatic circuit breaker or other no less effective device approved by the Secretary of adequate current-interrupting capacity in each ungrounded conductor. Disconnecting devices used to disconnect power from trailing cables shall be plainly marked and identified and such devices shall be equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected.

**(c) Distribution center junctions; safety connections**

When two or more trailing cables junction to the same distribution center, means shall be provided to assure against connecting a trailing cable to the wrong size circuit breaker.

**(d) Temporary splices; usable period; exceptions; quality**

One temporary splice may be made in any trailing cable. Such trailing cable may only be

used for the next twenty-four hour period. No temporary splice shall be made in a trailing cable within twenty-five feet of the machine, except cable reel equipment. Temporary splices in trailing cables shall be made in a workmanlike manner and shall be mechanically strong and well insulated. Trailing cables or hand cables which have exposed wires or which have splices that heat or spark under load shall not be used. As used in this subsection, the term "splice" means the mechanical joining of one or more conductors that have been severed.

**(e) Permanent splices; quality**

When permanent splices in trailing cables are made, they shall be—

(1) mechanically strong with adequate electrical conductivity and flexibility;

(2) effectively insulated and sealed so as to exclude moisture; and

(3) vulcanized or otherwise treated with suitable materials to provide flame-resistant qualities and good bonding to the outer jacket.

**(f) Clamping of cables**

Trailing cables shall be clamped to machines in a manner to protect the cables from damage and to prevent strain on the electrical connections. Trailing cables shall be adequately protected to prevent damage by mobile equipment.

**(g) Making and breaking of connections to junction boxes**

Trailing cable and power cable connections to junction boxes shall not be made or broken under load.

(Pub. L. 91-173, title III, §306, Dec. 30, 1969, 83 Stat. 779.)

**Statutory Notes and Related Subsidiaries****EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 867. Grounding of equipment****(a) Metallic enclosed power conductors; metallic frames and other equipment; methods**

All metallic sheaths, armors, and conduits enclosing power conductors shall be electrically continuous throughout and shall be grounded by methods approved by an authorized representative of the Secretary. Metallic frames, casings, and other enclosures of electric equipment that can become "alive" through failure of insulation or by contact with energized parts shall be grounded by methods approved by an authorized representative of the Secretary. Methods other than grounding which provide no less effective protection may be permitted by the Secretary or his authorized representative.

**(b) Frames of offtrack direct current machines; enclosures of related detached components**

The frames of all offtrack direct current machines and the enclosures of related detached components shall be effectively grounded, or otherwise maintained at no less safe voltages, by methods approved by an authorized representative of the Secretary.

**(c) Stationary high-voltage equipment powered by underground delta systems**

The frames of all stationary high-voltage equipment receiving power from ungrounded delta systems shall be grounded by methods approved by an authorized representative of the Secretary.

**(d) Repairs of high-voltage lines; exceptions**

High-voltage lines, both on the surface and underground, shall be deenergized and grounded before work is performed on them, except that repairs may be permitted, in the case of energized surface high-voltage lines, if such repairs are made by a qualified person in accordance with procedures and safeguards, including, but not limited to a requirement that the operator of such mine provide, test, and maintain protective devices in making such repairs, to be prescribed by the Secretary prior to the operative date of this subchapter.

**(e) Deenergizing of underground power circuits on idle days; exceptions**

When not in use, power circuits underground shall be deenergized on idle days and idle shifts, except that rectifiers and transformers may remain energized.

(Pub. L. 91-173, title III, §307, Dec. 30, 1969, 83 Stat. 780.)

**Editorial Notes**

**REFERENCES IN TEXT**

For the operative date of this subchapter, referred to in subsec. (d), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

**Statutory Notes and Related Subsidiaries**

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 868. Underground high-voltage distribution**

**(a) Circuits entering underground areas of mines; circuit breakers**

High-voltage circuits entering the underground area of any coal mine shall be protected by suitable circuit breakers of adequate interrupting capacity which are properly tested and maintained as prescribed by the Secretary. Such breakers shall be equipped with devices to provide protection against under-voltage, grounded phase, short circuit, and overcurrent.

**(b) Circuits extending underground and supplying equipment; direct neutral grounds; ground conductors for frames, exceptions; location of disconnection devices, exceptions**

High-voltage circuits extending underground and supplying portable, mobile, or stationary high-voltage equipment shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the source transformers, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for

the frames of all high-voltage equipment supplied power from that circuit, except that the Secretary or his authorized representative may permit ungrounded high-voltage circuits to be extended underground to feed stationary electrical equipment if such circuits are either steel armored or installed in grounded, rigid steel conduit throughout their entire length, and upon his finding that such exception does not pose a hazard to the miners. Within one hundred feet of the point on the surface where high-voltage circuits enter the underground portion of the mine, disconnecting devices shall be installed and so equipped or designed in such a manner that it can be determined by visual observation that the power is disconnected, except that the Secretary or his authorized representative may permit such devices to be installed at a greater distance from such area of the mine if he determines, based on existing physical conditions, that such installation will be more accessible at a greater distance and will not pose any hazard to the miners.

**(c) Grounding resistors**

The grounding resistor, where required, shall be of the proper ohmic value to limit the voltage drop in the grounding circuit external to the resistor to not more than 100 volts under fault conditions. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

**(d) Inclusion of fail safe ground check circuits in resistance grounded systems; operative functions; time extension**

Six months after the operative date of this subchapter, high-voltage, resistance grounded systems shall include a fail safe ground check circuit to monitor continuously the grounding circuit to assure continuity and the fail safe ground check circuit shall cause the circuit breaker to open when either the ground or pilot check wire is broken, or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of twelve months, may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available.

**(e) Underground cables used in resistance grounded systems; metallic shields for power conductors; standards; splices**

(1) Underground high-voltage cables used in resistance grounded systems shall be equipped with metallic shields around each power conductor, with one or more ground conductors having a total cross-sectional area of not less than one-half the power conductor, and with an insulated internal or external conductor not smaller than No. 8 (AWG) for the ground continuity check circuit.

(2) All such cables shall be adequate for the intended current and voltage. Splices made in such cables shall provide continuity of all components.

**(f) Couplers for power circuits; guidelines for construction**

Couplers that are used with medium-voltage or high-voltage power circuits shall be of the

three-phase type with a full metallic shell, except that the Secretary may permit, under such guidelines as he may prescribe, no less effective couplers constructed of materials other than metal. Couplers shall be adequate for the voltage and current expected. All exposed metal on the metallic couplers shall be grounded to the ground conductor in the cable. The coupler shall be constructed so that the ground check continuity conductor shall be broken first and the ground conductors shall be broken last when the coupler is being uncoupled.

**(g) Connections of single-phase loads**

Single-phase loads, such as transformer primaries, shall be connected phase to phase.

**(h) Installation of underground transmission cables**

All underground high-voltage transmission cables shall be installed only in regularly inspected air courses and haulageways, and shall be covered, buried, or placed so as to afford protection against damage, guarded where men regularly work or pass under them unless they are six and one-half feet or more above the floor or rail, securely anchored, properly insulated, and guarded at ends, and covered, insulated, or placed to prevent contact with trolley wires and other low-voltage circuits.

**(i) Disconnection devices; location; visual observation of position of switch**

Disconnecting devices shall be installed at the beginning of branch lines in high-voltage circuits and equipped or designed in such a manner that it can be determined by visual observation that the circuit is deenergized when the switches are open.

**(j) Circuit breakers and disconnection devices; markings**

Circuit breakers and disconnecting switches underground shall be marked for identification.

**(k) Splices in cables used as trailing cables; terminations and splices in other cables**

In the case of high-voltage cables used as trailing cables, temporary splices shall not be used and all permanent splices shall be made in accordance with section 866(e) of this title. Terminations and splices in all other high-voltage cables shall be made in accordance with the manufacturer's specifications.

**(l) Grounding of frames of underground equipment**

Frames, supporting structures, and enclosures of stationary, portable, or mobile underground high-voltage equipment and all high-voltage equipment supplying power to such equipment receiving power from resistance grounded systems shall be effectively grounded to the high-voltage ground.

**(m) Moving of power centers, transformers, and cables; deenergizing; exceptions; safety guidelines; record of examinations**

Power centers and portable transformers shall be deenergized before they are moved from one location to another, except that, when equipment powered by sources other than such centers or transformers is not available, the Sec-

retary may permit such centers and transformers to be moved while energized, if he determines that another equivalent or greater hazard may otherwise be created, and if they are moved under the supervision of a qualified person, and if such centers and transformers are examined prior to such movement by such person and found to be grounded by methods approved by an authorized representative of the Secretary and otherwise protected from hazards to the miner. A record shall be kept of such examinations. High-voltage cables, other than trailing cables, shall not be moved or handled at any time while energized, except that, when such centers and transformers are moved while energized as permitted under this subsection, energized high-voltage cables attached to such centers and transformers may be moved only by a qualified person and the operator of such mine shall require that such person wear approved and tested insulated wireman's gloves.

(Pub. L. 91-173, title III, §308, Dec. 30, 1969, 83 Stat. 780.)

**Editorial Notes**

**REFERENCES IN TEXT**

For the operative date of this subchapter, referred to in subsec. (d), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

**Statutory Notes and Related Subsidiaries**

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 869. Underground low- and medium-voltage alternating current circuits**

**(a) Circuits providing power for three-phase equipment; circuit breakers**

Low- and medium-voltage power circuits serving three-phase alternating current equipment shall be protected by suitable circuit breakers of adequate interrupting capacity which are properly tested and maintained as prescribed by the Secretary. Such breakers shall be equipped with devices to provide protection against under-voltage, grounded phase, short circuit, and over-current.

**(b) Circuits used underground; direct neutral grounds; ground conductors for frames; exceptions; grounding resistors**

Low- and medium-voltage three-phase alternating-current circuits used underground shall contain either a direct or derived neutral which shall be grounded through a suitable resistor at the power center, and a grounding circuit, originating at the grounded side of the grounding resistor, shall extend along with the power conductors and serve as a grounding conductor for the frames of all the electrical equipment supplied power from that circuit, except that the Secretary or his authorized representative may permit ungrounded low- and medium-voltage circuits to be used underground to feed such stationary electrical equipment if such circuits are either steel armored or installed in grounded

rigid steel conduit throughout their entire length. The grounding resistor, where required, shall be of the proper ohmic value to limit the ground fault current to 25 amperes. The grounding resistor shall be rated for maximum fault current continuously and insulated from ground for a voltage equal to the phase-to-phase voltage of the system.

**(c) Inclusion of fail safe ground check circuits in resistance ground systems; operative functions; time extension; couplers for power circuits; guidelines for construction**

Six months after the operative date of this subchapter, low- and medium-voltage resistance grounded systems shall include a fail safe ground check circuit to monitor continuously the grounding circuit to assure continuity which ground check circuit shall cause the circuit breaker to open when either the ground or pilot check wire is broken, or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of twelve months, may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Cable couplers shall be constructed so that the ground check continuity conductor shall be broken first and the ground conductors shall be broken last when the coupler is being uncoupled.

**(d) Disconnecting devices installed in conjunction with circuit breakers; purpose; trailing cables for mobile equipment; guidelines for construction; time extension; splices**

Disconnecting devices shall be installed in conjunction with the circuit breaker to provide visual evidence that the power is disconnected. Trailing cables for mobile equipment shall contain one or more ground conductors having a cross sectional area of not less than one-half the power conductor, and, six months after the operative date of this subchapter, an insulated conductor for the ground continuity check circuit or other no less effective device approved by the Secretary or his authorized representative to assure such continuity, except that an extension of time, not in excess of twelve months may be permitted by the Secretary on a mine-by-mine basis if he determines that such equipment is not available. Splices made in the cables shall provide continuity of all components.

**(e) Connections of single phase loads**

Single phase loads shall be connected phase to phase.

**(f) Circuit breakers; markings**

Circuit breakers shall be marked for identification.

**(g) Trailing cables for medium voltage circuits; guidelines for construction**

Trailing cables for medium voltage circuits shall include grounding conductors, a ground check conductor, and ground metallic shields around each power conductor or a grounded metallic shield over the assembly, except that on equipment employing cable reels, cables without shields may be used if the insulation is rated 2,000 volts or more.

(Pub. L. 91-173, title III, §309, Dec. 30, 1969, 83 Stat. 782.)

## Editorial Notes

### REFERENCES IN TEXT

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

### Statutory Notes and Related Subsidiaries

#### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

## § 870. Trolley wires and trolley feeder wires

### (a) Intervals for cutoff switches

Trolley wires and trolley feeder wires shall be provided with cutout switches at intervals of not more than 2,000 feet and near the beginning of all branch lines.

### (b) Overcurrent protection devices

Trolley wires and trolley feeder wires shall be provided with overcurrent protection.

### (c) Location of wires

Trolley wires and trolley feeder wires, high-voltage cables and transformers shall not be located 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.)

### Statutory Notes and Related Subsidiaries

#### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

## § 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.)

**Editorial Notes**

**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.

**Statutory Notes and Related Subsidiaries**

**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.

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 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, escapeways, 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.)

**Editorial Notes**

**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.

**Statutory Notes and Related Subsidiaries**

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 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 material, maintained in good condition, and kept closed.

**(e) Transportation of explosives or detonators in underground mines**

Explosives or detonators shall be transported in special closed containers (1) in cars moved by means of a locomotive or rope, (2) on belts, (3) in

shuttle cars, or (4) in equipment designed especially to transport such explosives or detonators.

**(f) Storage of explosives and detonators in working sections of underground mines; containers; locations**

When supplies of explosives and detonators for use in one or more working sections are stored underground, they shall be kept in section boxes or magazines of substantial construction with no metal exposed on the inside, located at least twenty-five feet from roadways and power wires, and in a dry, well rock-dusted location protected from falls of roof, except in pitching beds, where it is not possible to comply with the location requirement, such boxes shall be placed in niches cut into the solid coal or rock.

**(g) Location of explosive and detonator containers in working places of underground mines**

Explosives and detonators stored in the working places shall be kept in separate closed containers which shall be located out of the line of blast and not less than fifty feet from the working face and fifteen feet from any pipeline, powerline, rail, or conveyor, except that, if kept in niches in the rib, the distance from any pipeline, powerline, rail, or conveyor shall be at least five feet. Such explosives and detonators, when stored, shall be separated by a distance of at least five feet.

(Pub. L. 91-173, title III, §313, Dec. 30, 1969, 83 Stat. 785.)

**Statutory Notes and Related Subsidiaries**

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 874. Hoisting and mantrips**

**(a) Transporting of persons; required equipment and capabilities; safety catches; daily examinations; operators**

Every hoist used to transport persons at a coal mine shall be equipped with overspeed, overwind, and automatic stop controls. Every hoist handling platforms, cages, or other devices used to transport persons shall be equipped with brakes capable of stopping the fully loaded platform, cage, or other device; with hoisting cable adequately strong to sustain the fully loaded platform, cage, or other device; and have a proper margin of safety. Cages, platforms, or other devices which are used to transport persons in shafts and slopes shall be equipped with safety catches or other no less effective devices approved by the Secretary that act quickly and effectively in an emergency, and such catches shall be tested at least once every two months. Hoisting equipment, including automatic elevators, that is used to transport persons shall be examined daily. Where persons are transported into, or out of, a coal mine by hoists, a qualified hoisting engineer shall be on duty while any person is underground, except that no such engineer shall be required for automatically operated cages, platforms, or elevators.

**(b) Promulgation of other safeguards**

Other safeguards adequate, in the judgment of an authorized representative of the Secretary, to minimize hazards with respect to transportation of men and materials shall be provided.

**(c) Rated capacities; indicator for position of cage**

Hoists shall have rated capacities consistent with the loads handled and the recommended safety factors of the ropes used. An accurate and reliable indicator of the position of the cage, platform, skip, bucket, or cars shall be provided.

**(d) Methods for signaling between shaft stations and hoist rooms**

There shall be at least two effective methods approved by the Secretary of signaling between each of the shaft stations and the hoist room, one of which shall be a telephone or speaking tube.

**(e) Braking equipment for haulage cars used in underground mines**

Each locomotive and haulage car used in an underground coal mine shall be equipped with automatic brakes, where space permits. Where space does not permit automatic brakes, locomotives and haulage cars shall be subject to speed reduction gear, or other similar devices approved by the Secretary which are designed to stop the locomotives and haulage cars with the proper margin of safety.

**(f) Automatic couplers for haulage equipment**

All haulage equipment acquired by an operator of a coal mine on or after one year after the operative date of this subchapter shall be equipped with automatic couplers which couple by impact and uncouple without the necessity of persons going between the ends of such equipment. All haulage equipment without automatic couplers in use in a mine on the operative date of this subchapter shall also be so equipped within four years after the operative date of this subchapter.

(Pub. L. 91-173, title III, §314, Dec. 30, 1969, 83 Stat. 786.)

**Editorial Notes**

**REFERENCES IN TEXT**

For the operative date of this subchapter, referred to in subsec. (f), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

**Statutory Notes and Related Subsidiaries**

**EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 875. Emergency shelters; construction; contents; implementation plans**

The Secretary or an authorized representative of the Secretary may prescribe in any coal mine that rescue chambers, properly sealed and ventilated, be erected at suitable locations in the mine to which persons may go in case of an emergency for protection against hazards. Such



chambers shall be properly equipped with first aid materials, an adequate supply of air and self-contained breathing equipment, an independent communication system to the surface, and proper accommodations for the persons while awaiting rescue, and such other equipment as the Secretary may require. A plan for the erection, maintenance, and revisions of such chambers and the training of the miners in their proper use shall be submitted by the operator to the Secretary for his approval.

(Pub. L. 91-173, title III, §315, Dec. 30, 1969, 83 Stat. 787.)

#### **Editorial Notes**

##### **EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

#### **Statutory Notes and Related Subsidiaries**

##### **REGULATIONS**

Pub. L. 110-161, div. G, title I, §112(b), Dec. 26, 2007, 121 Stat. 2168, provided that: "Not later than June 15, 2008, the Secretary of Labor shall propose regulations pursuant to section 315 of the Federal Coal Mine Health and Safety Act of 1969 [30 U.S.C. 875], consistent with the recommendations of the National Institute for Occupational Safety and Health pursuant to section 13 of the MINER Act (Public Law 109-236) [120 Stat. 504], requiring rescue chambers, or facilities that afford at least the same measure of protection, in underground coal mines. The Secretary shall finalize the regulations not later than December 31, 2008."

### **§ 876. Communication facilities; locations and emergency response plans**

#### **(a) In general**

Telephone service or equivalent two-way communication facilities, approved by the Secretary or his authorized representative, shall be provided between the surface and each landing of main shafts and slopes and between the surface and each working section of any coal mine that is more than one hundred feet from a portal.

#### **(b) Accident preparedness and response**

##### **(1) In general**

Each underground coal mine operator shall carry out on a continuing basis a program to improve accident preparedness and response at each mine.

##### **(2) Response and preparedness plan**

###### **(A) In general**

Not later than 60 days after June 15, 2006, each underground coal mine operator shall develop and adopt a written accident response plan that complies with this subsection with respect to each mine of the operator, and periodically update such plans to reflect changes in operations in the mine, advances in technology, or other relevant considerations. Each such operator shall make the accident response plan available to the miners and the miners' representatives.

###### **(B) Plan requirements**

An accident response plan under subparagraph (A) shall—

(i) provide for the evacuation of all individuals endangered by an emergency; and

(ii) provide for the maintenance of individuals trapped underground in the event that miners are not able to evacuate the mine.

#### **(C) Plan approval**

The accident response plan under subparagraph (A) shall be subject to review and approval by the Secretary. In determining whether to approve a particular plan the Secretary shall take into consideration all comments submitted by miners or their representatives. Approved plans shall—

(i) afford miners a level of safety protection at least consistent with the existing standards, including standards mandated by law and regulation;

(ii) reflect the most recent credible scientific research;

(iii) be technologically feasible, make use of current commercially available technology, and account for the specific physical characteristics of the mine; and

(iv) reflect the improvements in mine safety gained from experience under this chapter and other worker safety and health laws.

#### **(D) Plan review**

The accident response plan under subparagraph (A) shall be reviewed periodically, but at least every 6 months, by the Secretary. In such periodic reviews, the Secretary shall consider all comments submitted by miners or miners' representatives and intervening advancements in science and technology that could be implemented to enhance miners' ability to evacuate or otherwise survive in an emergency.

#### **(E) Plan content-general requirements**

To be approved under subparagraph (C), an accident response plan shall include the following:

##### **(i) Post-accident communications**

The plan shall provide for a redundant means of communication with the surface for persons underground, such as secondary telephone or equivalent two-way communication.

##### **(ii) Post-accident tracking**

Consistent with commercially available technology and with the physical constraints, if any, of the mine, the plan shall provide for above ground personnel to determine the current, or immediately pre-accident, location of all underground personnel. Any system so utilized shall be functional, reliable, and calculated to remain serviceable in a post-accident setting.

##### **(iii) Post-accident breathable air**

The plan shall provide for—

(I) emergency supplies of breathable air for individuals trapped underground sufficient to maintain such individuals for a sustained period of time;

(II) in addition to the 2 hours of breathable air per miner required by law

under the emergency temporary standard as of the day before June 15, 2006, caches of self-rescuers providing in the aggregate not less than 2 hours per miner to be kept in escapeways from the deepest work area to the surface at a distance of no further than an average miner could walk in 30 minutes;

(III) a maintenance schedule for checking the reliability of self rescuers, retiring older self-rescuers first, and introducing new self-rescuer technology, such as units with interchangeable air or oxygen cylinders not requiring doffing to replenish airflow and units with supplies of greater than 60 minutes, as they are approved by the Administration and become available on the market; and

(IV) training for each miner in proper procedures for donning self-rescuers, switching from one unit to another, and ensuring a proper fit.

**(iv) Post-accident lifelines**

The plan shall provide for the use of flame-resistant directional lifelines or equivalent systems in escapeways to enable evacuation. The flame-resistance requirement of this clause shall apply upon the replacement of existing lifelines, or, in the case of lifelines in working sections, upon the earlier of the replacement of such lifelines or 3 years after June 15, 2006.

**(v) Training**

The plan shall provide a training program for emergency procedures described in the plan which will not diminish the requirements for mandatory health and safety training currently required under section 825 of this title.

**(vi) Local coordination**

The plan shall set out procedures for coordination and communication between the operator, mine rescue teams, and local emergency response personnel and make provisions for familiarizing local rescue personnel with surface functions that may be required in the course of mine rescue work.

**(F) Plan content-specific requirements**

**(i) In general**

In addition to the content requirements contained in subparagraph (E), and subject to the considerations contained in subparagraph (C), the Secretary may make additional plan requirements with respect to any of the content matters.

**(ii) Post accident communications**

Not later than 3 years after June 15, 2006, a plan shall, to be approved, provide for post accident communication between underground and surface personnel via a wireless two-way medium, and provide for an electronic tracking system permitting surface personnel to determine the location of any persons trapped underground or set forth within the plan the reasons such provisions can not be adopted. Where

such plan sets forth the reasons such provisions can not be adopted, the plan shall also set forth the operator's alternative means of compliance. Such alternative shall approximate, as closely as possible, the degree of functional utility and safety protection provided by the wireless two-way medium and tracking system referred to in this subpart.<sup>1</sup>

**(G) Plan dispute resolution**

**(i) In general**

Any dispute between the Secretary and an operator with respect to the content of the operator's plan or any refusal by the Secretary to approve such a plan shall be resolved on an expedited basis.

**(ii) Disputes**

In the event of a dispute or refusal described in clause (i), the Secretary shall issue a citation which shall be immediately referred to a Commission Administrative Law Judge. The Secretary and the operator shall submit all relevant material regarding the dispute to the Administrative Law Judge within 15 days of the date of the referral. The Administrative Law Judge shall render his or her decision with respect to the plan content dispute within 15 days of the receipt of the submission.

**(iii) Further appeals**

A party adversely affected by a decision under clause (ii) may pursue all further available appeal rights with respect to the citation involved, except that inclusion of the disputed provision in the plan will not be limited by such appeal unless such relief is requested by the operator and permitted by the Administrative Law Judge.

**(H) Maintaining protections for miners**

Notwithstanding any other provision of this chapter, nothing in this section, and no response and preparedness plan developed under this section, shall be approved if it reduces the protection afforded miners by an existing mandatory health or safety standard.

(Pub. L. 91-173, title III, §316, Dec. 30, 1969, 83 Stat. 787; Pub. L. 109-236, §2, June 15, 2006, 120 Stat. 493.)

**Editorial Notes**

**REFERENCES IN TEXT**

This chapter, referred to in subsec. (b)(2)(C)(iv), (H), 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.

**AMENDMENTS**

2006—Pub. L. 109-236 inserted "and emergency response plans" after "locations" in section catchline, designated existing provisions as subsec. (a) and inserted heading, and added subsec. (b).

<sup>1</sup> So in original. Probably should be "subparagraph".

**Statutory Notes and Related Subsidiaries****EFFECTIVE DATE**

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

**§ 877. General safety provisions****(a) Location of oil and gas wells; establishment and maintenance of barriers; minimum requisites; exceptions**

Each operator of a coal mine shall take reasonable measures to locate oil and gas wells penetrating coalbeds or any underground area of a coal mine. When located, such operator shall establish and maintain barriers around such oil and gas wells in accordance with State laws and regulations, except that such barriers shall not be less than three hundred feet in diameter, unless the Secretary or his authorized representative permits a lesser barrier consistent with the applicable State laws and regulations where such lesser barrier will be adequate to protect against hazards from such wells to the miners in such mine, or unless the Secretary or his authorized representative requires a greater barrier where the depth of the mine, other geologic conditions, or other factors warrant such a greater barrier.

**(b) Boreholes in advance of work face; distance in advance of work face; distance between boreholes**

Whenever any working place approaches within fifty feet of abandoned areas in the mine as shown by surveys made and certified by a registered engineer or surveyor, or within two hundred feet of any other abandoned areas of the mine which cannot be inspected and which may contain dangerous accumulations of water or gas, or within two hundred feet of any workings of an adjacent mine, a borehole or boreholes shall be drilled to a distance of at least twenty feet in advance of the working face of such working place and shall be continually maintained to a distance of at least ten feet in advance of the advancing working face. When there is more than one borehole, they shall be drilled sufficiently close to each other to insure that the advancing working face will not accidentally hole through into abandoned areas or adjacent mines. Boreholes shall also be drilled not more than eight feet apart in the rib of such working place to a distance of at least twenty feet and at an angle of forty-five degrees. Such rib holes shall be drilled in one or both ribs of such working place as may be necessary for adequate protection of miners in such place.

**(c) Prohibition against smoking; implementation programs**

No person shall smoke, carry smoking materials, matches, or lighters underground, or smoke in or around oil houses, explosives magazines, or other surface areas where such practice may cause a fire or explosion. The operator shall institute a program, approved by the Secretary, to insure that any person entering the underground area of the mine does not carry smoking materials, matches, or lighters.

**(d) Portable electric lamps; exceptions**

Persons underground shall use only permissible electric lamps approved by the Secretary for portable illumination. No open flame shall be permitted in the underground area of any coal mine, except as permitted under section 871(d) of this title.

**(e) Promulgation of lighting standards**

Within nine months after the operative date of this subchapter, the Secretary shall propose the standards under which all working places in a mine shall be illuminated by permissible lighting, within eighteen months after the promulgation of such standards, while persons are working in such places.

**(f) Escapeways; ventilation; maintenance; tests of passageways; protection of entrance; connection between mine openings**

(1) Except as provided in paragraphs (2) and (3) of this subsection, at least two separate and distinct travelable passageways which are maintained to insure passage at all times of any person, including disabled persons, and which are to be designated as escapeways, at least one of which is ventilated with intake air, shall be provided from each working section continuous to the surface escape drift opening, or continuous to the escape shaft or slope facilities to the surface, as appropriate, and shall be maintained in safe condition and properly marked. Mine openings shall be adequately protected to prevent the entrance into the underground area of the mine of surface fires, fumes, smoke, and flood water. Escape facilities approved by the Secretary or his authorized representative, properly maintained and frequently tested, shall be present at or in each escape shaft or slope to allow all persons, including disabled persons, to escape quickly to the surface in the event of an emergency.

(2) When new coal mines are opened, not more than twenty miners shall be allowed at any one time in any mine until a connection has been made between the two mine openings, and such connections shall be made as soon as possible.

(3) When only one mine opening is available, owing to final mining of pillars, not more than twenty miners shall be allowed in such mine at any one time, and the distance between the mine opening and working face shall not exceed five hundred feet.

(4) In the case of all coal mines opened on or after the operative date of this subchapter, and in the case of all new working sections opened on or after such date in mines opened prior to such date, the escapeway required by this section to be ventilated with intake air shall be separated from the belt and trolley haulage entries of the mine for the entire length of such entries to the beginning of each working section, except that the Secretary or his authorized representative may permit such separation to be extended for a greater or lesser distance so long as such extension does not pose a hazard to the miners.

**(g) Erection of fireproof structures; prior existing structures; fire doors; monthly tests; records; availability**

After the operative date of this subchapter, all structures erected on the surface within one

hundred feet of any mine opening shall be of fireproof construction. Unless structures existing on or prior to such date which are located within one hundred feet of any mine opening are of such construction, fire doors shall be erected at effective points in mine openings to prevent smoke or fire from outside sources endangering miners underground. These doors shall be tested at least monthly to insure effective operation. A record of such tests shall be kept in an area on the surface of the mine chosen by the operator to minimize the danger of destruction by fire or other hazard and shall be available for inspection by interested persons.

**(h) Prevention of accumulations of coal dust and methane gas; surface coal-handling facilities; air-intake openings**

Adequate measures shall be taken to prevent methane and coal dust from accumulating in excessive concentrations in or on surface coal-handling facilities, but in no event shall methane be permitted to accumulate in concentrations in or on surface coal-handling facilities in excess of limits established for methane by the Secretary within one year after the operative date of this subchapter. Where coal is dumped at or near air-intake openings, provisions shall be made to avoid dust from entering the mine.

**(i) Training programs**

Every operator of a coal mine shall provide a program, approved by the Secretary, of training and retraining of both qualified and certified persons needed to carry out functions prescribed in this chapter.

**(j) Electric face equipment; installation of canopies**

An authorized representative of the Secretary may require in any coal mine where the height of the coalbed permits that electric face equipment, including shuttle cars, be provided with substantially constructed canopies or cabs to protect the miners operating such equipment from roof falls and from rib and face rolls.

**(k) Mine entrances; sealing; prevention of entry by unauthorized personnel**

On and after the operative date of this subchapter, the opening of any coal mine that is declared inactive by its operator or is permanently closed or abandoned for more than ninety days, shall be sealed by the operator in a manner prescribed by the Secretary. Openings of all other mines shall be adequately protected in a manner prescribed by the Secretary to prevent entrance by unauthorized persons.

**(l) Facilities for changing and storing clothes; toilet and bathing facilities**

The Secretary may require any operator to provide adequate facilities for the miners to change from the clothes worn underground, to provide for the storing of such clothes from shift to shift, and to provide sanitary and bathing facilities. Sanitary toilet facilities shall be provided in the active workings of the mine when such surface facilities are not readily accessible to the active workings.

**(m) Emergency medical assistance preparations; locations for medical equipment; filing of implementation plans**

Each operator shall make arrangements in advance for obtaining emergency medical assistance and transportation for injured persons. Emergency communications shall be provided to the nearest point of assistance. Selected agents of the operator shall be trained in first aid and first aid training shall be made available to all miners. Each coal mine shall have an adequate supply of first aid equipment located on the surface, at the bottom of shafts and slopes, and at other strategic locations near the working faces. In fulfilling each of the requirements of this subsection, the operator shall meet at least minimum requirements prescribed by the Secretary of Health and Human Services. Within two months after the operative date of this subchapter, each operator shall file with the Secretary a plan setting forth in such detail as the Secretary may require the manner in which such operator has fulfilled the requirements in this subsection.

**(n) Self-rescue device; training of personnel**

A self-rescue device approved by the Secretary shall be made available to each miner by the operator which shall be adequate to protect such miner for one hour or longer. Each operator shall train each miner in the use of such device.

**(o) Methods of eliminating oxygen deficiencies**

The Secretary shall prescribe improved methods of assuring that miners are not exposed to atmospheres that are deficient in oxygen.

**(p) Identification check system; records**

Each operator of a coal mine shall establish a check-in and check-out system which will provide positive identification of every person underground, and will provide an accurate record of the persons in the mine kept on the surface in a place chosen to minimize the danger of destruction by fire or other hazard. Such record shall bear a number identical to an identification check that is securely fastened to the lamp belt worn by the person underground. The identification check shall be made of a rust resistant metal of not less than sixteen gauge.

**(q) Installation of devices to prevent and suppress ignition on electric cutting face equipment**

The Secretary shall require, when technologically feasible, that devices to prevent and suppress ignitions be installed on electric face cutting equipment.

**(r) Tunnelling under water; permits; contents; necessity; safety zones; restrictions**

Whenever an operator mines coal from a coal mine opened after the operative date of this subchapter, or from any new working section of a mine opened prior to such date, in a manner that requires the construction, operation, and maintenance of tunnels under any river, stream, lake, or other body of water, that is, in the judgment of the Secretary, sufficiently large to constitute a hazard to miners, such operator shall obtain a permit from the Secretary which shall include such terms and conditions as he deems

appropriate to protect the safety of miners working or passing through such tunnels from cave-ins and other hazards. Such permits shall require, in accordance with a plan to be approved by the Secretary, that a safety zone be established beneath and adjacent to such body of water. No plan shall be approved unless there is a minimum of cover to be determined by the Secretary, based on test holes drilled by the operator in a manner to be prescribed by the Secretary. No such permit shall be required in the case of any new working section of a mine which is located under any water resource reservoir being constructed by a Federal agency on December 30, 1969, the operator of which is required by such agency to operate in a manner that adequately protects the safety of miners working in such section from cave-ins and other hazards.

#### (s) Drinking water

An adequate supply of potable water shall be provided for drinking purposes in the active workings of the mine, and such water shall be carried, stored, and otherwise protected in sanitary containers.

#### (t) Standards for prevention of explosions from nonmethane gases and for testing for accumulations

Within one year after the operative date of this subchapter, the Secretary shall propose standards for preventing explosions from explosive gases other than methane and for testing for accumulations of such gases.

(Pub. L. 91-173, title III, §317, Dec. 30, 1969, 83 Stat. 787; Pub. L. 96-88, title V, §509(b), Oct. 17, 1979, 93 Stat. 695.)

### Editorial Notes

#### REFERENCES IN TEXT

For the operative date of this subchapter, referred to in subsecs. (e), (f)(4), (g), (h), (k), (m), (r), and (t), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

This chapter, referred to in subsec. (i), 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.

### Statutory Notes and Related Subsidiaries

#### CHANGE OF NAME

"Secretary of Health and Human Services" substituted for "Secretary of Health, Education, and Welfare" in subsec. (m) pursuant to section 509(b) of Pub. L. 96-88 which is classified to section 3508(b) of Title 20, Education.

#### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

### § 878. Definitions

For the purpose of this subchapter and subchapter II of this chapter, the term—

(a) "certified" or "registered" as applied to any person means a person certified or reg-

istered by the State in which the coal mine is located to perform duties prescribed by such subchapters, except that, in a State where no program of certification or registration is provided or where the program does not meet at least minimum Federal standards established by the Secretary, such certification or registration shall be by the Secretary;

(b) "qualified person" means, as the context requires,

(1) an individual deemed qualified by the Secretary and designated by the operator to make tests and examinations required by this chapter; and

(2) an individual deemed, in accordance with minimum requirements to be established by the Secretary, qualified by training, education, and experience, to perform electrical work, to maintain electrical equipment, and to conduct examinations and tests of all electrical equipment;

(c) "permissible" as applied to—

(1) equipment used in the operation of a coal mine, means equipment, other than permissible electric face equipment, to which an approval plate, label, or other device is attached as authorized by the Secretary and which meets specifications which are prescribed by the Secretary for the construction and maintenance of such equipment and are designed to assure that such equipment will not cause a mine explosion or a mine fire,

(2) explosives, shot firing units, or blasting devices used in such mine, means explosives, shot firing units, or blasting devices which meet specifications which are prescribed by the Secretary, and

(3) the manner of use of equipment or explosives, shot firing units, and blasting devices, means the manner of use prescribed by the Secretary;

(d) "rock dust" means pulverized limestone, dolomite, gypsum, anhydrite, shale, adobe, or other inert material, preferably light colored, 100 per centum of which will pass through a sieve having twenty meshes per linear inch and 70 per centum or more of which will pass through a sieve having two hundred meshes per linear inch; the particles of which when wetted and dried will not cohere to form a cake which will not be dispersed into separate particles by a light blast of air; and which does not contain more than 5 per centum of combustible matter or more than a total of 4 per centum of free and combined silica (SiO<sub>2</sub>), or, where the Secretary finds that such silica concentrations are not available, which does not contain more than 5 per centum of free and combined silica;

(e) "anthracite" means coals with a volatile ratio equal to 0.12 or less;

(f) "volatile ratio" means volatile matter content divided by the volatile matter plus the fixed carbon;

(g)(1) "working face" means any place in a coal mine in which work of extracting coal from its natural deposit in the earth is performed during the mining cycle,

(2) "working place" means the area of a coal mine in by the last open crosscut,

(3) “working section” means all areas of the coal mine from the loading point of the section to and including the working faces,

(4) “active workings” means any place in a coal mine where miners are normally required to work or travel;

(h) “abandoned areas” means sections, panels, and other areas that are not ventilated and examined in the manner required for working places under section 863 of this title;

(i) “permissible” as applied to electric face equipment means all electrically operated equipment taken into or used in by the last open crosscut of an entry or a room of any coal mine the electrical parts of which, including, but not limited to, associated electrical equipment, components, and accessories, are designed, constructed, and installed, in accordance with the specifications of the Secretary, to assure that such equipment will not cause a mine explosion or mine fire, and the other features of which are designed and constructed, in accordance with the specifications of the Secretary, to prevent, to the greatest extent possible, other accidents in the use of such equipment; and the regulations of the Secretary or the Director of the United States Bureau of Mines in effect on the operative date of this subchapter relating to the requirements for investigation, testing, approval, certification, and acceptance of such equipment as permissible shall continue in effect until modified or superseded by the Secretary, except that the Secretary shall provide procedures, including, where feasible, testing, approval, certification, and acceptance in the field by an authorized representative of the Secretary, to facilitate compliance by an operator with the requirements of section 865(a) of this title within the periods prescribed therein;

(j) “low voltage” means up to and including 660 volts; “medium voltage” means voltages from 661 to 1,000 volts; and “high voltage” means more than 1,000 volts;

(k) Repealed. Pub. L. 95-164, title II, § 202(b), Nov. 9, 1977, 91 Stat. 1317.

(l) “coal mine” includes areas of adjoining mines connected underground.

(Pub. L. 91-173, title III, § 318, Dec. 30, 1969, 83 Stat. 791; Pub. L. 95-164, title II, § 202(b), Nov. 9, 1977, 91 Stat. 1317; Pub. L. 102-285, § 10(b), May 18, 1992, 106 Stat. 172.)

#### Editorial Notes

##### REFERENCES IN TEXT

This chapter, referred to in par. (b)(1), 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.

For the operative date of this subchapter, referred to in par. (i), see section 509 of Pub. L. 91-173, set out as an Effective Date note under section 801 of this title.

##### AMENDMENTS

1977—Par. (k). Pub. L. 95-164 struck out par. (k) which defined “respirable dust” as dust particles 5 microns or less in size.

#### Statutory Notes and Related Subsidiaries

##### CHANGE OF NAME

“United States Bureau of Mines” substituted for “Bureau of Mines” in par. (i) 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.

##### EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95-164 effective Nov. 9, 1977, see section 307 of Pub. L. 95-164, set out as a note under section 801 of this title.

##### EFFECTIVE DATE

Section operative 90 days after Dec. 30, 1969, except to the extent an earlier date is specifically provided for in Pub. L. 91-173, see section 509 of Pub. L. 91-173, set out as a note under section 801 of this title.

#### SUBCHAPTER IV—BLACK LUNG BENEFITS

##### PART A—GENERAL PROVISIONS

#### § 901. Congressional findings and declaration of purpose; short title

(a) Congress finds and declares that there are a significant number of coal miners living today who are totally disabled due to pneumoconiosis arising out of employment in one or more of the Nation’s coal mines; that there are a number of survivors of coal miners whose deaths were due to this disease; and that few States provide benefits for death or disability due to this disease to coal miners or their surviving dependents. It is, therefore, the purpose of this subchapter to provide benefits, in cooperation with the States, to coal miners who are totally disabled due to pneumoconiosis and to the surviving dependents of miners whose death was due to such disease; and to ensure that in the future adequate benefits are provided to coal miners and their dependents in the event of their death or total disability due to pneumoconiosis.

(b) This subchapter may be cited as the “Black Lung Benefits Act”.

(Pub. L. 91-173, title IV, § 401, Dec. 30, 1969, 83 Stat. 792; Pub. L. 92-303, §§ 3(a), 4(b)(2), May 19, 1972, 86 Stat. 153, 154; Pub. L. 95-239, § 16, Mar. 1, 1978, 92 Stat. 105; Pub. L. 97-119, title II, § 203(a)(4), Dec. 29, 1981, 95 Stat. 1644.)

#### Editorial Notes

##### AMENDMENTS

1981—Subsec. (a). Pub. L. 97-119 struck out “or who were totally disabled by this disease at the time of their deaths” after “due to this disease” and “due to such disease”.

1978—Pub. L. 95-239 designated existing provisions as subsec. (a) and added subsec. (b).

1972—Pub. L. 92-303, § 3(a), inserted “or who were totally disabled by this disease at the time of their deaths” after “disease” the first and third times it appeared and struck out “underground” before “coal mines”.

#### Statutory Notes and Related Subsidiaries

##### EFFECTIVE DATE OF 1981 AMENDMENT

Pub. L. 97-119, title II, § 206(a), Dec. 29, 1981, 95 Stat. 1645, provided that: “Except as otherwise provided, the