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THE GENERAL ASSEMBLY OF PENNSYLVANIA

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# HOUSE BILL

## No. 2164 Session of 2008

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YUDICHAK, JANUARY 15, 2008

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REFERRED TO COMMITTEE ON ENVIRONMENTAL RESOURCES AND ENERGY,  
JANUARY 15, 2008

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AN ACT

1 Providing for bituminous coal mines; and making a repeal.

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14 The General Assembly of the Commonwealth of Pennsylvania

15 hereby enacts as follows:

16 CHAPTER 1

17 PRELIMINARY PROVISIONS

18 Section 101. Short title.

19 This act shall be known and may be cited as the Bituminous  
20 Coal Mine Safety Act.

21 Section 102. Application.

22 This act shall apply to all underground bituminous coal mines  
23 in this Commonwealth, including all of the following:

24 (1) The construction, operation, maintenance and sealing  
25 of underground bituminous coal mines.

26 (2) The operators of underground bituminous coal mines.

27 (3) All persons at underground bituminous coal mines.

28 Section 103. Findings and purpose.

29 (a) Findings.--The General Assembly finds that it is in the  
30 public interest to establish a comprehensive scheme to protect

1 the lives, health and safety of those who work at mines in this  
2 Commonwealth. This comprehensive scheme shall address all of the  
3 following:

4 (1) The first priority and concern of all in the  
5 bituminous coal mining industry must be the health and safety  
6 of those who work in and at mines and others in and about  
7 mines.

8 (2) Deaths and injuries from unsafe and unhealthful  
9 conditions and practices at underground bituminous coal mines  
10 cause grief and suffering to miners and their families.

11 (3) The efforts of mine operators, miners and the  
12 Commonwealth, through the Department of Environmental  
13 Protection, have over time significantly reduced the  
14 occurrence of deaths and injuries in the underground  
15 bituminous coal mining industry. This reduction in deaths and  
16 injuries is due, in part, to the safety standards under the  
17 act of July 17, 1961 (P.L.659, No.339), known as the  
18 Pennsylvania Bituminous Coal Mine Act, and the grant of  
19 authority to the department to approve underground bituminous  
20 coal mining activity and equipment.

21 (4) The Pennsylvania Bituminous Coal Mine Act is  
22 becoming outdated and lacks an effective mechanism to modify  
23 existing standards and to adopt new standards.

24 (5) The Commonwealth must maintain a strong, independent  
25 mine safety program.

26 (6) The operators at underground bituminous coal mines,  
27 with the assistance of certified miners and mine officials  
28 have the primary responsibility to prevent the existence of  
29 unsafe and unhealthful conditions at underground bituminous  
30 coal mines.

1           (7) Underground bituminous coal mining is highly  
2 specialized, technical and complex and requires frequent  
3 review, refinement and improvement of standards to protect  
4 the health and safety of miners.

5           (8) The formulation of appropriate rules and practices  
6 to improve health and safety and to provide increased  
7 protection of miners can be accomplished more effectively by  
8 persons who have experience and expertise in underground  
9 bituminous coal mining and underground bituminous coal mine  
10 health and safety.

11           (9) Mine safety is enhanced through a rigorous program  
12 for training and certifying persons to work at mines in this  
13 Commonwealth.

14           (10) It is imperative that the department have the  
15 capability to coordinate and assist rescue operations in  
16 response to accidents at underground bituminous coal mines.

17           (11) It is in the public interest to encourage the  
18 underground bituminous coal mining industry to establish,  
19 maintain and support mine rescue teams and other emergency  
20 response capabilities.

21           (b) Purpose.--It is the purpose of this act to do all of the  
22 following:

23           (1) To use the full extent of the Commonwealth's powers  
24 to protect the lives, health and safety of miners and others  
25 in and about underground bituminous coal mines.

26           (2) To establish and promulgate improved mandatory  
27 health and safety standards to protect the health and safety  
28 of miners and others in and about underground coal mines in  
29 this Commonwealth.

30           (3) To establish a rulemaking process that enables the

1 expeditious updating of the interim mandatory health and  
2 safety standards established under this act and to otherwise  
3 protect the health, safety and welfare of miners and others  
4 in and about mines.

5 (4) To require that operators at underground bituminous  
6 coal mines and every person at every mine comply with these  
7 standards.

8 (5) To improve and expand research, development and  
9 training programs aimed at preventing underground bituminous  
10 coal mine accidents and occupationally caused diseases in the  
11 industry.

12 (6) To enable the Commonwealth to respond as necessary  
13 and appropriate to accidents and other emergencies at  
14 underground bituminous coal mines.

15 Section 104. Definitions.

16 The following words and phrases when used in this act shall  
17 have the meanings given to them in this section unless the  
18 context clearly indicates otherwise:

19 "Abandoned workings." Excavations, either caved or sealed,  
20 that are deserted and in which further mining is not intended.

21 "Accident." An unanticipated event, including any of the  
22 following:

23 (1) A death of an individual at a mine.

24 (2) An injury to an individual at a mine, which has a  
25 reasonable potential to cause death.

26 (3) An entrapment of an individual at a mine which has a  
27 reasonable potential to cause death or serious injury.

28 (4) An unplanned inundation of a mine by a liquid or  
29 gas.

30 (5) An unplanned ignition or explosion of gas or dust.

1           (6) An unplanned mine fire not extinguished within ten  
2 minutes of discovery.

3           (7) An unplanned ignition or explosion of a blasting  
4 agent or an explosive.

5           (8) An unplanned roof fall at or above the anchorage  
6 zone in active workings where roof bolts are in use.

7           (9) An unplanned roof or rib fall in active workings  
8 that impairs ventilation or impedes passage.

9           (10) A coal or rock outburst that causes withdrawal of  
10 miners or which disrupts regular mining activity for more  
11 than one hour.

12          (11) An unstable condition at an impoundment, refuse  
13 pile or culm bank, which does any of the following:

14               (i) Requires emergency action in order to prevent  
15 failure.

16               (ii) Causes individuals to evacuate an area.

17          (12) Failure of an impoundment, refuse pile or culm  
18 bank.

19          (13) Damage to hoisting equipment in a shaft or slope  
20 which endangers an individual or which interferes with use of  
21 the equipment for more than 30 minutes.

22          (14) An event at a mine which causes death or bodily  
23 injury to an individual not at the mine at the time the event  
24 occurs.

25       "Active workings." All areas in a mine that are not sealed  
26 and which must be ventilated and examined under this act.

27       "Advisory committee." The Technical Advisory Committee on  
28 Diesel-Powered Equipment.

29       "Approval." A written document, issued by the Department of  
30 Environmental Protection, which states that a technology,

1 material, machinery, tool, process, plan, device, equipment,  
2 facility, method, supply, accessory or other item meets the  
3 requirements of this act or of regulations promulgated under  
4 this act.

5 "Board." The Board of Coal Mine Safety.

6 "Certified person." An individual who is qualified under the  
7 provisions of this act and who holds a certificate from the  
8 Department of Environmental Protection to perform a particular  
9 duty in connection with the operation at a mine. The term  
10 includes all of the following:

11 (1) Mine foreman.

12 (2) Assistant mine foreman.

13 (3) Mine examiner.

14 (4) Mine electrician.

15 (5) Machine runner.

16 (6) Shot-firer.

17 (7) Miner.

18 "Check survey." The term shall have the same meaning as  
19 closed-loop survey.

20 "Closed-loop survey." The method of establishing the  
21 accuracy of a mine survey by conducting a loop traverse to the  
22 point of beginning or to a known point of another closed-loop  
23 survey. The term does not include a double angle, double  
24 distance survey unless that method is used to complete a closed-  
25 loop survey.

26 "Coal-producing shift." A shift primarily intended for coal  
27 production rather than for purposes of construction, maintenance  
28 and housekeeping even though some coal production may be  
29 incident to such purposes.

30 "Department." The Department of Environmental Protection of

1 the Commonwealth.

2 "DPEP." Diesel-powered equipment package.

3 "Face." The solid coal at the inby end of a working place.

4 "Inactive workings." All portions of a mine in which  
5 operations have been suspended for an indefinite period, but  
6 have not been abandoned.

7 "Interim mandatory safety standards." The safety standards  
8 under Chapters 2 and 3.

9 "Lateral and face take-ups." The individual measurements  
10 left and right of the entry center line used to depict the  
11 physical location of the coal ribs and pillars.

12 "Lost-time injury." When an individual is unable to report  
13 for work at the individual's regularly scheduled job on the  
14 individual's next regularly scheduled work shift due to a work-  
15 related injury.

16 "Mine." The shafts, slopes or drifts of an underground  
17 bituminous coal mine, either under construction, in use or  
18 abandoned, connected with excavations penetrating or intended to  
19 penetrate coal stratum or strata, which excavations are or were  
20 ventilated by air currents and connected by a method of  
21 transportation over which coal may be or was delivered to one or  
22 more points outside the mine. The term shall not include any  
23 surface coal mine.

24 "Mine examiner." An individual designated by the mine  
25 foreman or superintendent to examine a mine for gas and other  
26 dangers. The term shall include the title "fire boss."

27 "Mine foreman." An individual appointed by an operator or  
28 superintendent to be in charge of all of the following:

29 (1) The inside workings of a mine.

30 (2) An individual in a mine.

(3) A visitor to the inside of a mine, except for Federal and State Government representatives.

"Mine official." Any of the following:

(1) Superintendent.

(2) Mine foreman.

(3) Assistant mine foreman.

(4) Mine examiner.

(5) Mine electrician.

"Miner." An individual who is certified by the Department of Environmental Protection to work in an underground mine.

"MSHA." The Mine Safety and Health Administration within the United States Department of Labor.

"NIOSH." The National Institute for Occupational Safety and Health within the United States Department of Health and Human Services.

"Operator." An owner, lessee or other person who operates, controls or supervises a coal mine.

"Permissible explosives." Explosives approved for use in mines by the Mine Safety and Health Administration, the National Institute for Occupational Safety and Health or their predecessor agencies, notwithstanding the date of the approval.

"Permit boundary." The limits of the mine as established by the coal mine activity permit issued under the act of April 27, 1966 (1st Sp. Sess., P.L.31, No.1), known as The Bituminous Mine Subsidence and Land Conservation Act.

"Person." Any individual, partnership, association, corporation, firm, subsidiary of a corporation or other organization.

"Pointer spads." Additional spads set in the roof to indicate the line of direction or bearing for future



1 excavations. Pointer spads may or may not be referenced in the  
2 field notes. Pointer spads are not considered a permanent record  
3 because they only indicate direction.

4 "Representative of the miners." Any person or organization  
5 which represents two or more miners at a coal mine for the  
6 purpose of this act.

7 "Return air." Air that has ventilated the last working place  
8 on any split of any working section or any worked-out area  
9 whether pillared or nonpillared. The term shall include all of  
10 the following:

11 (1) Air that mixes with air that has ventilated the last  
12 working place on any split of any working section or any  
13 worked-out area, whether pillared or nonpillared.

14 (2) Any air that has passed or ventilated seal areas.

15 "Secretary." The Secretary of Environmental Protection of  
16 the Commonwealth or the designee of the secretary.

17 "Shaft." A vertical opening through the strata that is or  
18 may be used for the purpose of ventilation or drainage or for  
19 hoisting men or material, or both, in connection with the mining  
20 of coal or for other purposes related to mining.

21 "Slope and drift." An incline or opening used for the same  
22 purpose as a shaft.

23 "Spad." A flat spike, firmly anchored in a hole drilled into  
24 the mine ceiling from which is threaded a plumbline.

25 "Superintendent." An individual appointed by an operator to  
26 manage a mine.

27 "Survey line." A representation of the line of survey from  
28 survey station spad to survey station spad as shown on the  
29 official mine map.

30 "Survey station spad." A permanent spad set in the roof that

1 has a unique identification number or designation.

2 "Underground bituminous coal mine." A mine and the surface  
3 facilities that are physically connected to a mine, including  
4 preparation plants and loadouts at a mine, in this Commonwealth  
5 and not included in anthracite boundaries.

6 "Ventilation apparatus." All equipment, materials and  
7 devices used to establish, provide or support movement of air  
8 through a mine.

9 "Work area." Any place at a mine where work is being  
10 performed. The term shall not include areas where individuals  
11 are making examinations required under this act.

12 "Working place." The area in a mine from the last open  
13 crosscut to and including the face.

14 "Working section." The area in a mine from the face  
15 extending back 1,000 feet.

16 "Year of experience." For the purposes of issuing  
17 certifications under this act, the term shall mean working 240  
18 eight-hour days or the hourly equivalent within a 12-month  
19 period beginning with the first day of employment in a mine.

20 Section 105. Powers and duties of department.

21 The department shall have the power and duty to administer a  
22 mine safety program for persons employed at mines. The  
23 department has the power and duty to do all of the following:

24 (1) Make inspections of public or private property as  
25 are necessary or useful in determining compliance with the  
26 provisions of this act, the rules and regulations promulgated  
27 under this act and any order, approval or permit issued by  
28 the department. The inspections may include examining or  
29 copying any documents required by this act.

30 (2) Conduct investigations and interviews of persons at

1 a mine or elsewhere.

2 (3) Issue orders to implement the provisions and  
3 effectuate the purposes of this act.

4 (4) Institute proceedings and actions to implement the  
5 provisions and effectuate the purposes of this act, including  
6 suits seeking equitable relief or declaratory judgments and  
7 suits to recover costs incurred by the department.

8 (5) Institute prosecutions against the operator or his  
9 agent for a violation of any provision of this act.

10 (6) Determine whether a person is qualified to carry out  
11 a particular function or duty at a mine and to issue  
12 appropriate certification.

13 (7) Disqualify any person whose conduct poses a threat  
14 to the health and safety of those who work at mines or who  
15 interfere with the safe operation of any mine.

16 (8) Review and take appropriate action concerning safety  
17 of miners and persons in and about mines on all permit  
18 applications submitted to the department.

19 (9) Receive and act upon complaints.

20 (10) Conduct, review and, if funds are allocated for  
21 such purposes, commission scientific and other research  
22 directed to the purposes of this act.

23 (11) Approve electrical equipment, machinery, materials,  
24 methods and plans to be used at mines in this Commonwealth.

25 (12) Approve, on a mine-specific basis, the use of new  
26 technology, methods, materials, machinery, equipment,  
27 systems, tools, devices, processes and plans different from  
28 those required or authorized under the provisions of this act  
29 or the regulations promulgated under this act. The department  
30 may only make approvals where doing so would meet or exceed

1 the protections afforded under this act or the regulations  
2 promulgated under this act. Approvals under this section  
3 shall have no precedent effect. All approvals in effect as of  
4 the effective date of this section shall remain in effect  
5 unless suspended, modified or revoked by the department.

6 (13) Respond to coordinate and assist responses to mine  
7 accidents and other emergencies.

8 (14) Establish an abandoned mine map repository.

9 (15) Serve as the agency of the Commonwealth for the  
10 receipt of funds from the Federal Government or other public  
11 agencies and expend the funds for studies and research with  
12 respect to and for the enforcement and administration of the  
13 purposes and provisions of this act and the regulations  
14 promulgated under this act.

15 (16) Assess civil penalties.

16 (17) Encourage and promote industry-based mine rescue  
17 capabilities.

18 (18) Provide training for department personnel and  
19 individuals who work in or who wish to work in the mining  
20 industry.

21 (19) Administer, deposit and expend funds from the Mine  
22 Safety Fund.

23 (20) Prepare and distribute to operators a mine  
24 operator's questionnaire form.

25 (21) Perform any act not inconsistent with any provision  
26 of this act, which it may deem necessary or proper for the  
27 effective administration or enforcement of this act and the  
28 rules or regulations promulgated under this act.

29 Section 106. Board of Coal Mine Safety.

30 (a) Establishment.--The Board of Coal Mine Safety is

1 established and shall develop all of the following for  
2 recommendation to the department:

3 (1) Amendments that form the basis of the interim  
4 mandatory safety standards.

5 (2) Additional rules with respect to mine safety if the  
6 board determines that existing Federal and State regulations  
7 do not adequately address a specific hazard.

8 (3) Other rules and regulations as specifically  
9 authorized under this act.

10 (b) Composition.--The board shall consist of the secretary,  
11 who shall be the chairperson, and the following members  
12 appointed by the Governor:

13 (1) Three members who represent the viewpoint of the  
14 coal mine operators in this Commonwealth.

15 (2) Three members who represent the viewpoint of the  
16 working miners in this Commonwealth.

17 (c) Terms.--All appointments shall be subject to the  
18 following:

19 (1) The initial appointments after the effective date of  
20 this section shall have staggered terms so that, for each  
21 group of appointments under subsection (b), one member shall  
22 serve a term of one year, one member shall serve a term of  
23 two years and one member shall serve a term of three years.  
24 All subsequent appointments shall be for terms of three  
25 years.

26 (2) Members shall be eligible for reappointment.

27 (d) Representation.--For the initial appointments after the  
28 effective date of this section, the following shall apply:

29 (1) The members appointed under subsection (b)(1) shall  
30 be selected from a list containing six nominees submitted by

1 the major trade association representing coal mine operators  
2 in this Commonwealth.

3 (2) The members appointed under subsection (b)(2) shall  
4 be selected from a list containing six nominees submitted by  
5 the highest-ranking official within the major labor  
6 organization representing coal miners in this Commonwealth.

7 (e) Vacancies.--The following shall apply to vacancies on  
8 the board:

9 (1) The members appointed under subsection (b)(1) shall  
10 be selected from a list containing three nominees submitted  
11 by the major trade association representing coal mine  
12 operators in this Commonwealth.

13 (2) The members appointed under subsection (b)(2) shall  
14 be selected from a list containing three nominees submitted  
15 by the highest-ranking official within the major labor  
16 organization representing coal miners in this Commonwealth.

17 (f) Employment.--Members of the board may continue in  
18 employment in the coal industry while serving on the board.

19 (g) Service.--Members shall serve at the pleasure of the  
20 Governor.

21 (h) Compensation.--Members of the board shall be compensated  
22 at the appropriate per diem rate based on the prevailing formula  
23 administered by the Commonwealth, but not less than \$150 per  
24 day, plus reasonable expenses incurred while performing their  
25 official duties. The compensation shall be adjusted annually by  
26 the department to account for inflation based on the Consumer  
27 Price Index published by the United States Department of Labor.  
28 An individual board member may waive his or her right to all or  
29 part of the compensation.

30 (i) Meetings.--The board shall meet within 180 days of the

1 effective date of this section for, at a minimum, organizational  
2 purposes. Members of the board shall meet at least twice during  
3 each calendar year or more often as may be necessary.

4 (j) Access.--In performing its functions, the board shall  
5 have access to the services of the department. The department  
6 shall make clerical support and assistance available to enable  
7 the board to carry out its duties.

8 (k) Funding.--Funding for the operation of the board and  
9 implementation of the provisions of this chapter shall be  
10 derived from the general government appropriation of the  
11 department.

12 (l) Nominations.--If a vacancy on the board occurs,  
13 nominations and appointments shall be made in the following  
14 manner:

15 (1) In the case of an appointment to fill a vacancy,  
16 nomination of a person for each vacancy shall be requested by  
17 and submitted to the Governor within 30 days after the  
18 vacancy occurs by the major trade association or major labor  
19 organization which nominated the person whose seat on the  
20 board is vacant.

21 (2) The vacancy shall be filled by the Governor within  
22 30 days of his or her receipt of the nomination.

23 (m) Quorum.--A quorum of the board shall consist of five  
24 members. Actions of the board must be approved by an affirmative  
25 vote of at least five members.

26 Section 106.1. Rulemaking.

27 (a) Authority.--The board shall have the authority to  
28 promulgate regulations that are necessary or appropriate to  
29 implement the requirements of this act and to protect the  
30 health, safety and welfare of miners and other persons in and

1 about mines.

2 (b) Consideration.--The board shall consider promulgating as  
3 regulations any Federal mine safety standards that are either:

4 (1) Existing as of the effective date of this section  
5 and that are not included in interim mandatory safety  
6 standards.

7 (2) New standards, except for standards concerning  
8 diesel equipment, promulgated after the effective date of  
9 this section.

10 (c) Regulations.--Within 250 days of the effective date of  
11 this section, the board shall begin to consider the standards  
12 under subsection (b)(1) for promulgation as regulations. If  
13 final regulations are not promulgated by the board within three  
14 years of the effective date of this section, the secretary may  
15 promulgate final regulations consistent with Federal standards.

16 (d) New standards.--Within 70 days of the effective date of  
17 new mine safety standards under subsection (b)(2), the board  
18 shall begin to consider standards for promulgation as  
19 regulations. If the regulations are not promulgated as final by  
20 the board within three years of the effective date of the  
21 promulgation of the new standards, the secretary may promulgate  
22 final regulations consistent with Federal standards.

23 (e) Justification for regulations.--Regulations shall be  
24 based upon consideration of the latest scientific data in the  
25 field, the technical feasibility of standards, experience gained  
26 under this and other safety statutes, information submitted to  
27 the board in writing by any interested person or the  
28 recommendation of any member of the board, if the board  
29 determines that a regulation should be developed in order to  
30 serve the objectives of this act.



(f) Topic.--Without limiting the scope of the board's authority under this section, regulations may address any of the following:

(1) Revisions to an interim mandatory safety standard to address a new technology or method of mining.

(2) Hazards not addressed by existing safety standards.

(3) The identification of positions not listed under this act requiring a certificate of qualification.

(4) The establishment of fees for services in amounts sufficient to cover the department's costs of administering this act. The fees established by the board may be increased each year after implementation by the percentage, if any, by which the Consumer Price Index for the most recent calendar year exceeds the Consumer Price Index for the calendar year 1989. For the purposes of this paragraph, the Consumer Price Index for any calendar year shall mean the average of the Consumer Price Index for All Urban Consumers, published by the United States Department of Labor, as of the close of the 12-month period ending on August 31 of each calendar year.

(g) Safety.--No regulation promulgated by the board shall reduce or compromise the level of safety or protection afforded mine workers under this act. The secretary may disapprove a notice of a proposed regulation or a final regulation approved by the board which the secretary determines would reduce or compromise the level of safety or protection afforded mine workers under this act if the secretary describes the basis for the disapproval.

(h) MINER Act.--With regard to the adoption of Federal standards established pursuant to the Mine Improvement and New Emergency Response Act of 2006 (Public Law 109-236, 120 Stat.

1 493), the following shall apply:

2 (1) The board is specifically authorized to promulgate  
3 regulations that the board deems appropriate, including  
4 accelerated compliance schedules and additional requirements.

5 (2) The board shall consider promulgating regulations  
6 regarding flammability standards for conveyor belts.

7 (3) If MSHA fails to promulgate regulations regarding  
8 emergency shelters and chambers, the board shall promulgate  
9 regulations.

10 (4) Regulations shall be no less stringent than the  
11 Federal mine safety standards

12 (i) Action.--The board shall take action on the tests and  
13 evaluations performed by the mining industry under section  
14 334(b) and (c).

15 (j) Fees.--The department may set reasonable interim fees  
16 pending adoption of fee regulations under this section.

17 Section 106.2. Emergency shelters and chambers.

18 The board's emergency shelter or chamber regulations shall  
19 accomplish all of the following:

20 (1) Provide a minimum of 48 hours of life support,  
21 including air, water, emergency medical supplies and food,  
22 for the maximum number of miners reasonably expected to be on  
23 the working section.

24 (2) Be capable of surviving an initial event with a peak  
25 over pressure of 15 psi for three seconds and a flash fire,  
26 as defined by National Fire Protection Association standard  
27 NFPA-2113, of 300 degrees Fahrenheit for three seconds.

28 (3) Be constructed in a manner that the emergency  
29 shelter or chamber will be protected under normal handling  
30 and pre-event mine conditions.

1           (4) Provide for rapidly establishing and maintaining an  
2 internal shelter atmosphere of oxygen above 19.5%, carbon  
3 dioxide below 0.5%.

4           (5) Provide for carbon monoxide below 50 ppm and an  
5 apparent-temperature of 95 degrees Fahrenheit.

6           (6) Provide the ability to monitor carbon monoxide and  
7 oxygen inside and outside the shelter or chamber.

8           (7) Provide a means for entry and exit that maintains  
9 the integrity of the internal atmosphere.

10          (8) Provide a means for MSHA-certified intrinsically  
11 safe power if power is required.

12          (9) Provide a minimum of eight quarts of water per  
13 miner.

14          (10) Provide a minimum of 4,000 calories of food per  
15 miner.

16          (11) Provide a means for disposal of human waste to the  
17 outside of the shelter or chamber.

18          (12) Provide a first aid kit.

19          (13) Have provisions for inspection of the shelter or  
20 chamber and its contents.

21          (14) Contain manufacturer-recommended repair materials.

22          (15) Provide a battery-powered, occupant-activated  
23 strobe light, of a model approved by the board, that is  
24 visible from the outside indicating occupancy.

25          (16) Provide provisions for communication to the  
26 surface.

27          (17) Provide proof of current approval for all items and  
28 materials subject to approval.

29 Section 106.3. Notice to operators and miners.

30 The department shall send a copy in writing or electronically

1 of every proposed regulation and final regulation, at the time  
2 of publication in the Pennsylvania Bulletin, to the operator of  
3 each coal mine and the representative of the miners at the mine,  
4 and the copy shall be immediately posted on the bulletin board  
5 of the mine by the operator or his or her agent. Failure to  
6 receive the notice shall not invalidate the final regulation or  
7 relieve anyone of the obligation to comply with final  
8 regulation.

9 Section 106.4. Standards for surface facilities.

10 The department shall use the applicable standards contained  
11 in 30 CFR Part 77 (relating to mandatory safety standards,  
12 surface coal mines and surface work areas of underground coal  
13 mines) regarding the sinking of shafts and slopes and surface  
14 facilities that are part of mines, pending promulgation of  
15 regulations by the board regarding those activities and  
16 facilities.

17 Section 107. Safety issues.

18 The department shall consider the safety of miners in  
19 reviewing and acting on applications for permits issued to and  
20 for mines and shall include conditions addressing safety in  
21 issuing the permits. If the department determines that any  
22 aspect of the contemplated activity at an existing or proposed  
23 mine might constitute a threat to the health and safety of  
24 miners or persons in and about mines, the department shall  
25 require the applicant or operator to eliminate the threat. If  
26 the applicant or operator does not eliminate the threat to the  
27 department's satisfaction, the department shall deny the  
28 application or applications or shall unilaterally modify the  
29 terms of the permit or suspend or revoke the permit.

30 Section 108. Inspections.

1       The department shall make frequent inspections of mines. Each  
2 mine shall be inspected at least semiannually for electrical  
3 purposes and at least quarterly for general purposes.  
4 Inspections shall be conducted more frequently when the  
5 department determines that more frequent inspections are  
6 necessary or desirable. Inspections shall be conducted for the  
7 purposes of:

8           (1) Obtaining, utilizing and disseminating information  
9 relating to health and safety conditions, the causes of  
10 accidents and the causes of diseases and physical impairments  
11 originating in mines.

12          (2) Gathering information with respect to health or  
13 safety standards established or regulations promulgated under  
14 this act.

15          (3) Determining whether a danger exists.

16          (4) Determining whether the mine is in compliance with  
17 the provisions of this act, the mine safety regulations and  
18 any citation, order, permit or decision issued by the  
19 department under this act.

20 Section 109. Accidents.

21       (a) Duties of operator.--In the event of an accident  
22 occurring at a mine, an operator shall do all of the following:

23           (1) Notify the department no later than 15 minutes of  
24 discovery of the accident.

25           (2) Take appropriate measures to prevent the destruction  
26 of evidence which would assist in investigating the cause of  
27 the accident. Unless granted permission by the department, no  
28 operator may alter an accident site or an accident-related  
29 area until completion of all investigations pertaining to the  
30 accident, except to rescue any individual and prevent

1 destruction of mine equipment.

2 (3) Obtain the approval of the department for any plan  
3 to recover any person in the mine, to recover the coal mine  
4 or to return the affected areas of the mine to normal  
5 operations.

6 (4) Conduct its own investigation of the accident and  
7 develop a written report of the investigation. The report  
8 shall include all of the following:

9 (i) The date and hour of the accident.

10 (ii) The date the investigation began.

11 (iii) The names of the individuals participating in  
12 the investigation.

13 (iv) A description of the accident site.

14 (v) An explanation of the accident or injury,  
15 including a description of any equipment involved and  
16 relevant events before and after the accident.

17 (vi) An explanation of the cause of the accident.

18 (vii) An explanation of the cause of any injury  
19 sustained due to the accident.

20 (viii) The name, occupation and experience of any  
21 miner involved in the accident.

22 (ix) A sketch depicting the accident, including  
23 dimensions where pertinent.

24 (x) A description of steps taken to prevent a  
25 similar accident in the future.

26 (b) Duties of department.--In the event of an accident  
27 occurring at a mine, the department shall do all of the  
28 following:

29 (1) Take whatever action it deems appropriate, including  
30 the issuance of orders, to protect the life, health or safety

1 of any person, including coordinating and assisting rescue  
2 and recovery activities in the mine.

3 (2) Promptly decide whether to conduct an investigation  
4 of the accident and inform the operator and the miners'  
5 representative of its decision.

6 (c) Report.--Each operator shall report to the department  
7 each accident and lost-time injury.

8 (1) The operator shall report within ten working days of  
9 the accident or lost-time injury. An operator may meet the  
10 requirements of this paragraph by submitting a copy of the  
11 MSHA Mine Accident, Injury and Illness Report Form 7000-1  
12 required by 30 CFR § 50.20 (relating to preparation and  
13 submission of MSHA Report Form 7000-1--Mine Accident, Injury,  
14 and Illness Report) in use on the date of the accident.

15 (2) Each accident and lost-time injury shall be reported  
16 on a separate form. If more than one miner is injured in the  
17 same accident, the operator shall submit a separate form for  
18 each miner affected.

19 Section 110. Mine officials' certification.

20 (a) Administration.--After evaluating the examinations, the  
21 department shall issue certificates to those candidates who have  
22 met the established criteria for each certification category.

23 (b) Committee.--

24 (1) The department shall appoint a committee to annually  
25 review and update the department's database of examination  
26 questions and answers. The committee shall be made up of an  
27 equal number of persons representing the viewpoints of the  
28 department, operators and miners.

29 (2) Members of the committee shall be compensated in the  
30 same manner as members of the board under section 106(h). An

individual committee member may waive his or her right to all or part of the compensation under this paragraph.

(3) Members of the committee shall, after the committee has been duly organized, take and subscribe the following oath before an officer authorized to administer oaths:

We, the undersigned, do solemnly swear that we will perform the duties of members of this committee, and we will not divulge or make known to any person any question prepared for the mine officials, or in any manner assist any applicant to pass the examination.

(c) Confidential records.--Records pertaining to certification examinations shall not constitute a public record under the act of June 21, 1957 (P.L.390, No.212), referred to as the Right-to-Know Law.

Section 111. Classification of mines as gassy.

Notwithstanding any other provision of law, the distinction between gassy and nongassy mines is eliminated, and all underground bituminous mines shall comply with the requirements for gassy mines.

Section 112. Reports.

(a) Questionnaire.--The operator of an underground mine shall submit to the department a completed or revised deep mine questionnaire in the following instances:

(1) Prior to the commencement of any work for the purpose of opening of a new underground mine or reopening an underground mine that has closed.

(2) Upon change of the information reflected on the most recently submitted operator's questionnaire.

(a.1) Notice.--Upon discontinuance of the operation of an underground mine, the operator shall immediately notify the



1 department.

2 (b) Quarterly reports.--

3 (1) Each operator of an active mine shall submit  
4 quarterly reports within 15 days after the end of each  
5 quarter. The report shall contain information reflecting the  
6 activities of the previous quarter and shall include all of  
7 the following:

8 (i) The name and address of the mine.

9 (ii) Identification of the mine superintendent and  
10 mine foreman.

11 (iii) The employment, employee hours and coal  
12 production statistics for the mine.

13 (iv) A detailed description of the reportable  
14 injuries or accidents that occurred at the mine.

15 (2) An operator may meet the requirements of paragraph  
16 (1) by submitting a copy of the MSHA Quarterly Employment and  
17 Coal Production Report in use on the date of the quarterly  
18 report.

19 (c) Corrections.--By February 15 of each year, an operator  
20 must submit any corrections to the quarterly reports submitted  
21 during the prior year and must certify the accuracy of the  
22 corrected quarterly reports.

23 (d) Additional duties.--In addition to any records required  
24 under this act, a mine operator shall establish and maintain  
25 records, make reports and provide information as the department  
26 may require from time to time. The department is authorized to  
27 compile, analyze and publish, either in summary or detail form,  
28 the reports or information obtained. All records, information,  
29 reports, findings, notices, orders or decisions required or  
30 issued pursuant to or under this act may be published from time

1 to time, may be released to any interested person and shall  
2 constitute a public record under the act of June 21, 1957  
3 (P.L.390, No.212), referred to as the Right-to-Know Law.

4 (e) Copies.--An operator of a mine shall maintain a copy of  
5 the reports required by this section at the mine office closest  
6 to the mine for a period of not less than five years after  
7 submission of the reports.

8 Section 113. Mine rescue program.

9 (a) Establishment.--The department is authorized to  
10 establish and administer a mine rescue program for mines not  
11 able to provide a mine rescue crew for themselves. The  
12 department shall establish a program to do the following:

13 (1) Instruct mine employees how to care for persons  
14 injured in and about the mines.

15 (2) Train mine employees who may voluntarily seek  
16 training in the use of self-contained breathing apparatus,  
17 gas masks, first aid to the injured and other things or  
18 practices essential to the safe and efficient conduct of the  
19 work of first aid and mine rescue.

20 (b) Equipment.--The department shall purchase and maintain  
21 adequate quantities of emergency response vehicles, specialized  
22 equipment, supplies and services necessary to assure rapid and  
23 effective response to mine emergencies, including mine fires,  
24 mine explosions, mine inundations, entrapments and mine recovery  
25 operations.

26 (c) Contracts.--In the event of an emergency response, the  
27 department may use the emergency contracting provisions of 62  
28 Pa.C.S. § 516 (relating to emergency procurement) to lease  
29 additional services or equipment as is needed to respond to a  
30 mine emergency. The department, with the consent of the

1 Governor, may use funds available to the Commonwealth for the  
2 purpose of responding to a mine emergency.

3 Section 114. Direction of mine rescue work.

4 The department shall coordinate and assist in all responses  
5 to a mine emergency conducted in this Commonwealth. The extent  
6 of coordination and assistance shall depend on the nature of the  
7 mine emergency and the operator's ability to respond to the mine  
8 emergency. This authority shall include directing responses to  
9 mine emergencies and assigning mine rescue crews and mine rescue  
10 and recovery work to mine inspectors or other qualified  
11 employees of the department.

12 Section 115. Recovery of funds.

13 The department is authorized to seek from an operator  
14 reimbursement of funds expended by the department to rent  
15 equipment and obtain services in responding to a mine emergency.

16 Section 116. Mine Safety Fund.

17 There is created a special fund known as the Mine Safety  
18 Fund. All funds received by the department from fees, including  
19 those from fines and certificates of qualification, all civil  
20 penalties collected under this act and all funds recovered from  
21 operators for expenses incurred in responding to a mine  
22 emergency shall be deposited by the State Treasurer into the  
23 Mine Safety Fund and shall be used by the department for mine  
24 safety activities.

25 Section 117. Bituminous mine inspector.

26 Notwithstanding the act of August 5, 1941 (P.L.752, No.286),  
27 known as the Civil Service Act, in order to become eligible for  
28 employment as a bituminous mine inspector, a person must, at a  
29 minimum, meet the following qualifications:

30 (1) Be a resident of this Commonwealth.

(2) Be a person of good moral character and known temperate habits.

(3) Be physically capable of entering and inspecting a coal mine.

(4) Have at least a high school diploma.

(5) Be at least 31 years of age.

(6) Have had at least ten years' experience in an underground bituminous coal mine.

(7) Hold a current, valid certificate as a bituminous mine foreman, assistant mine foreman or mine examiner.

(8) Pass, with at least a score of 90%, the mine inspector's examination as conducted by the State Civil Service Commission in accordance with the Civil Service Act. Section 118. Bituminous mine electrical inspector.

Notwithstanding the act of August 5, 1941 (P.L.752, No.286), known as the Civil Service Act, in order to become eligible for employment as a bituminous mine electrical inspector, a person must meet at least the following qualifications:

(1) Be a resident of this Commonwealth.

(2) Be a person of good moral character and known temperate habits.

(3) Be physically capable of entering and inspecting a coal mine.

(4) Have at least a high school diploma.

(5) Be at least 30 years of age.

(6) Have had at least ten years' experience in an underground bituminous coal mine.

(7) Hold a current, valid certificate as a bituminous mine electrician.

(8) Pass, with at least a score of 90%, the mine

electrical inspector's examination as conducted by the State Civil Service Commission in accordance with the Civil Service Act.

Section 119. Availability of mine maps.

(a) Authorization.--The department is authorized and directed to obtain and copy all maps of mining conducted in this Commonwealth.

(b) Inspection and copying.--Any person who has possession of a mine map shall make the map available to the department for inspection and copying. The map shall be returned to its owner within 30 days.

(c) Liability.--No person shall, solely on the basis of supplying a mine map to the department, be attributed or divested of liability.

Section 120. Mine map repository.

The department shall develop and maintain a repository of all mine maps it has obtained or has had an opportunity to copy. The department shall organize and catalog the mine maps in the repository to enable the department, other government agencies, mine operators and the general public to review the mine maps and to determine the location of mine workings. All mine maps and copies of mine maps held by the department shall be open for public inspection and made available for review upon request during the department's normal business hours.

Section 121. Applicability.

The provisions of Chapters 2 and 3 shall not apply to the construction of shafts and slopes.

## CHAPTER 2

## GENERAL REQUIREMENTS FOR UNDERGROUND BITUMINOUS MINES

Section 201. General safety requirements.

1 The following are general safety requirements:

2 (1) All work must be performed in a safe manner.

3 (2) All equipment must be maintained in safe operating  
4 condition.

5 (3) No person shall be employed as a mine foreman,  
6 assistant mine foreman, mine examiner, mine electrician,  
7 mining machine operator, shot-firer or miner unless that  
8 person holds a current, valid certification from the  
9 department to work in that capacity. A person who holds a  
10 current, valid certification to be a mine foreman may also  
11 work as an assistant mine foreman or mine examiner. Only a  
12 mine official shall direct the work force in matters  
13 involving the safety of employees. A person who holds a  
14 current, valid certification as an assistant mine foreman may  
15 also work as a mine examiner.

16 (4) It shall be the duty of the operator and all mine  
17 officials to comply with and see that others comply with the  
18 provisions of this act, the regulations promulgated pursuant  
19 to this act, all orders and approvals and the safety  
20 conditions in permits issued to the mine. It shall also be  
21 the duty of the operator and all mine officials to cooperate  
22 with the department in implementing the provisions of this  
23 act and effectuating the purposes of this act.

24 (5) The operator and all mine officials shall comply  
25 with and follow all mining plans, approvals and orders issued  
26 by the department, rules and regulations of the operator, all  
27 provisions of law that are in harmony with this act and all  
28 other applicable laws. The operator is responsible for  
29 assuring that all activities in and around the mine,  
30 including those conducted by contractors, are conducted in

1 compliance with this act, regulations promulgated under this  
2 act, approvals and orders issued by the department and any  
3 safety conditions included in permits.

4 (6) During coal production, an assistant mine foreman  
5 shall be assigned to only one working section. The assistant  
6 mine foreman shall supervise persons engaged in the coal-  
7 cutting operation. The assistant mine foreman may perform  
8 additional duties provided that he spends a majority of his  
9 time supervising persons engaged in the coal-cutting  
10 operation.

11 (7) Every superintendent, mine foreman, assistant mine  
12 foreman, mine electrician and mine examiner shall represent  
13 the Commonwealth in the mine in which he or she is employed  
14 and shall be deemed an officer of the Commonwealth in  
15 enforcing the provisions of this act and performing his or  
16 her duties under this act. He or she shall perform these  
17 duties during such times as the mine is in operation and at  
18 such other times as the department deems to be necessary or  
19 appropriate to make the mine safe and to protect the health  
20 and safety of those who work in and around the mine.

21 Section 202. Qualifications for certification.

22 (a) General requirements.--

23 (1) Except as set forth under paragraph (2), in order to  
24 be eligible to sit for a certification examination, the  
25 following shall apply:

26 (i) An applicant must demonstrate the following  
27 levels of work experience in an underground bituminous  
28 coal mine:

29 (A) Mine foreman or mine electrician, five  
30 years.

1 (B) Assistant mine foreman, four years.

2 (C) Mine examiner, three years.

3 (ii) For each certification category in subparagraph  
4 (i), a minimum of two years' experience must have been in  
5 a working section.

6 (2) If an applicant holds a bachelor's degree in mining  
7 engineering or an associate degree in mining technology from  
8 a recognized institution of higher education in the case of a  
9 mine foreman, assistant mine foreman or mine examiner, or a  
10 bachelor's degree in electrical engineering or an associate  
11 degree in electrical technology from a recognized institution  
12 of higher learning in the case of a mine electrician, in  
13 order to be eligible to sit for a certification examination,  
14 the following shall apply:

15 (i) An applicant must demonstrate the following  
16 levels of work experience in an underground bituminous  
17 coal mine:

18 (A) Mine foreman or mine electrician, four  
19 years.

20 (B) Assistant mine foreman, three years.

21 (C) Mine examiner, two years.

22 (ii) For each certification category in subparagraph  
23 (i), a minimum of one year's experience must have been in  
24 a working section.

25 (b) Additional requirements.--The following additional  
26 requirements shall apply:

27 (1) All applicants shall be able to read and write the  
28 English language intelligently, and shall furnish the  
29 department with certificates as to their character and  
30 temperate habits, and a notarized statement from previous



1 employers setting forth the length of service and type of  
2 work performed in the different mines.

3 (2) Certificates of qualification as mine foremen shall  
4 be granted to persons who have given to the department  
5 satisfactory evidence of their ability to perform the duties  
6 of mine foreman and who have received training by persons  
7 approved by the department in determining the presence of  
8 explosive and noxious gases, and in the use and mechanics of  
9 all gas detection devices, and who have received an average  
10 of at least 80% in the examination.

11 (3) Certificates of qualification as assistant mine  
12 foremen shall be granted to persons who have given to the  
13 department satisfactory evidence of their ability to perform  
14 the duties of assistant mine foreman and who have received  
15 training by persons approved by the department in determining  
16 the presence of explosive and noxious gases, and in the use  
17 and mechanics of all gas detection devices, and who have  
18 received an average of at least 70% in the examination.

19 (4) Certificates of qualification as mine examiners  
20 shall be granted to persons who have given to the department  
21 satisfactory evidence of their ability to perform the duties  
22 of mine examiners and who have received training by persons  
23 approved by the department in determining the presence of  
24 explosive and noxious gases, and in the use and mechanics of  
25 all gas detection devices, and who have received an average  
26 of at least 75% in the mine examiners examination.

27 (5) Certificates of qualification as mine electrician  
28 shall be granted to persons who have given to the department  
29 satisfactory evidence of their ability to perform the duties  
30 of mine electrician and received training by persons approved

1 by the department in determining the presence of explosive  
2 and noxious gases, and in the use and mechanics of all gas  
3 detection devices, and who have received an average of 75% in  
4 the mine electrician's examination.

5 (6) Certificates of qualification or service granted  
6 prior to the effective date of this act shall have equal  
7 value with certificates of qualification granted under this  
8 act.

9 (7) All applicants who have satisfactorily passed  
10 examinations, after being certified but before assuming their  
11 duties as mine foremen, mine electricians, assistant mine  
12 foremen or mine examiners, shall accompany a certified mine  
13 foreman or certified assistant mine foreman for not less than  
14 two weeks for training purposes in accordance with a training  
15 program submitted by the operator and approved by the  
16 department. Any applicant who has been granted a prior mine  
17 official certificate need not undergo this training. The  
18 record of such training shall be maintained at the mine.

19 Section 203. Emergency use of mine examiner as assistant mine  
20 foreman.

21 The mine foreman may appoint a mine examiner who is willing  
22 to act as assistant mine foreman for not more than one month if  
23 all of the following apply:

24 (1) There is an emergency. As used in this paragraph,  
25 the term "emergency" means a condition which could not have  
26 been foreseen and requires immediate action.

27 (2) There is no assistant mine foreman available in the  
28 mine who is willing to act as assistant mine foreman.

29 (3) A mine foreman may act as an assistant mine foreman,  
30 a mine examiner or a miner. An assistant mine foreman may act

1 as a mine examiner or a miner. A mine examiner may act as a  
2 miner.

3 (4) Foreman trainees, where used, shall not direct the  
4 work force in matters involving directly or indirectly the  
5 safety of employees nor make tests or examinations required  
6 to be made by mine officials.

7 Section 204. Certification of miners.

8 No person shall be employed or engaged as a miner in any  
9 bituminous coal mine in this Commonwealth without first having  
10 obtained a certificate of competency and qualification, except  
11 that any miner holding such certificate may have a maximum of  
12 two persons working for him and under his direction as  
13 noncertified miners for the purpose of learning the business of  
14 mining, and such noncertified miner or noncertified miners shall  
15 be permitted to work under the direction of such miner without a  
16 certificate. The miner shall provide adequate oversight to keep  
17 the uncertified individual out of harm's way.

18 Section 205. Qualifications for certification as miners.

19 The following shall apply:

20 (1) Miners shall be examined and granted certificates  
21 under regulations of the department.

22 (2) No person shall be qualified to take the examination  
23 unless the person produces evidence of having had not less  
24 than one year's experience in bituminous coal mines.

25 (3) All persons possessing certificates of qualification  
26 issued by the Commonwealth entitling them to act as mine  
27 foremen, assistant mine foremen, mine examiners or mine  
28 electricians shall be eligible to engage at any time as  
29 miners in bituminous coal mines of this Commonwealth.

30 Section 206. Issuance of miners' certificates.

1       The form and manner of issuing miners' certificates shall be  
2 designated by the department. Certificates granted shall entitle  
3 the certificate holder to be employed as and do the work of a  
4 miner in the bituminous coal mines of this Commonwealth. A  
5 certificate granted shall not be transferable and a transfer  
6 shall be deemed a violation of this act.

7       Section 207. Certification of mining machine operators and  
8                               shot-firers.

9       (a) General rule.--It shall be unlawful to employ as a  
10 mining machine operator or shot-firer in any bituminous coal  
11 mine any person who has not given evidence to the department as  
12 to his fitness and competency to handle and use an approved gas  
13 detection device and his ability to determine the presence or  
14 absence of explosive gas and other dangerous conditions. The  
15 manner of determining fitness and competency shall be prescribed  
16 by the department. The department shall issue a certificate to  
17 those found competent, on a form prescribed by the department.  
18 The cost of the examination and certification shall be borne by  
19 the candidates.

20       (b) Eligibility.--An individual possessing a certificate of  
21 qualification issued by the Commonwealth entitling the  
22 individual to act as a mine foreman, assistant mine foreman,  
23 mine examiner or mine electrician is eligible to engage as a  
24 mining machine operator in a bituminous coal mine.

25       Section 208. Employment of mine foremen.

26       In order to secure efficient management and proper  
27 ventilation of mines, to promote the health and safety of the  
28 persons employed in mines and to protect and preserve the  
29 property connected with mines, the operator or superintendent  
30 shall employ a competent and practical mine foreman for every

1 mine, who shall be under the supervision and control of the  
2 operator or superintendent. The operator or superintendent of a  
3 mine shall be held as fully responsible as the individual  
4 appointed to act as mine foreman. The mine foreman shall have  
5 full charge of all the inside workings and the persons employed  
6 in the mine, subject, however, to the supervision and control of  
7 the operator or superintendent, in order that all the provisions  
8 of this act so far as they relate to his duties shall be  
9 complied with, and the regulations prescribed for each class of  
10 workmen under his charge are carried out in the strictest manner  
11 possible.

12 Section 209. Employment of mine electricians.

13 Each mine shall employ a certified mine electrician, who  
14 shall have full charge of the electrical apparatus at the mine,  
15 but shall be subject to the authority of the mine foreman. It  
16 shall be the duty of the mine electrician to assist the mine  
17 foreman in carrying out all the provisions of the bituminous  
18 mining laws bearing on the use and installation of electricity  
19 inside bituminous coal mines and the equipment powered thereby,  
20 and the mine electrician shall be subject to the same penalties  
21 as the mine foreman for any violation of these laws.

22 Section 210. Employment of assistant mine foremen.

23 When mine workings become so extensive that the mine foreman  
24 is unable personally to carry out the requirements of this act  
25 pertaining to duties, the mine foreman shall have the right to  
26 employ a sufficient number of competent persons to act as his  
27 assistants, who shall be under his instruction and the  
28 operator's or the superintendent's instruction in carrying out  
29 the provisions of this act. In each mine the mine foreman's  
30 assistants must possess assistant mine foreman certificates. In

1 case of the necessary temporary absence of the mine foreman, the  
2 mine foreman may deputize his responsibilities, for the time  
3 being, to an assistant mine foreman, who shall perform all the  
4 duties of the mine foreman. Any mine foreman, assistant mine  
5 foreman, mine examiner or mine electrician may supervise and  
6 direct the work of a maximum of two noncertified miners, and  
7 shall instruct the persons how safely and properly to perform  
8 their work.

9 Section 211. Ventilation responsibilities of mine foreman.

10 The following shall apply:

11 (1) A mine foreman shall devote the whole of his time to  
12 his duties in the mine when the mine is in operation, shall  
13 keep careful watch over the ventilating apparatus, the  
14 ventilation, airways and travelways and shall see that all  
15 stoppings along airways are properly built.

16 (2) A mine foreman shall ensure that proper cut-throughs  
17 are made in the pillars of all rooms and entries, and that  
18 they are closed when necessary or when required by the  
19 department, so that the ventilating current can be conducted  
20 in sufficient quantity through the last cut-through to the  
21 face of each room and entry. A mine foreman shall not permit  
22 any room or entry to be turned in advance of the ventilating  
23 current or in advance of the last cut-through in the entry.

24 (3) A mine foreman or an assistant mine foreman shall  
25 measure the air current at or near the main inlet and outlet  
26 airway at least once each week, and also in the last cut-  
27 through in the last room and in the entry beyond the last  
28 room turned in each entry. A record shall be made of daily  
29 measurements in the assistant mine foreman's daily report  
30 book. The measurements shall be taken on days when

1 individuals are at work, and for making the measurements an  
2 anemometer shall be provided and kept in good condition by  
3 the superintendent of the mine.

4 (4) The following pertain to fan stoppage:

5 (i) If a main mine fan stops and the ventilating  
6 quantity provided by the fan is not maintained by a  
7 backup fan system, the following actions shall be taken:

8 (A) The power inby the loading point shall be  
9 immediately disconnected and all men shall be  
10 withdrawn from the face areas of the mine to a point  
11 outby the loading point on the main travelway with  
12 established communications.

13 (B) As soon as it is known that the ventilation  
14 has been interrupted, all permissible battery-powered  
15 equipment shall be removed from the immediate face  
16 area and moved to a safe location outby the last open  
17 crosscut. All other battery-powered mobile equipment,  
18 except transportation equipment necessary for  
19 evacuation if located in a safe area, shall not be  
20 used after a ventilation interruption occurs. If  
21 possible, battery terminal leads shall be  
22 disconnected. If leads are not disconnected, all  
23 switches shall be turned off.

24 (C) If the interruption is less than 15 minutes,  
25 the working places, adjacent places and all other  
26 active working areas where methane may accumulate  
27 will be examined by a certified mine foreman,  
28 assistant mine foreman or mine examiner to determine  
29 if methane in the amount of 1.0 volume percent or  
30 more exists before power is restored and the men are

1           permitted to resume mining operations.

2           (ii) If the ventilation is not restored within 15  
3 minutes, the following precautions shall be taken:

4           (A) The power to all underground areas shall be  
5 disconnected.

6           (B) All persons shall be withdrawn from the mine  
7 on foot under proper supervision.

8           (C) If ventilation is restored before the  
9 evacuation is completed, the certified mine foreman,  
10 assistant mine foreman or mine examiner may start the  
11 reexamination of the mine, but all other persons must  
12 continue to evacuate.

13           (D) In order to provide for worker safety, power  
14 for communications may be left on.

15           (iii) As an alternative to evacuating the men on  
16 foot, a mine operator may propose to utilize mechanical  
17 equipment during the evacuation. To justify this proposal  
18 the operator must perform a survey that shows explosive  
19 gas will not migrate to or accumulate in the designated  
20 haulageways that will be used to evacuate the mine. The  
21 duration of the survey shall be at least twice the travel  
22 time from the farthest face to the surface. The operator  
23 shall provide the representative of the miners, if  
24 applicable, an opportunity to participate in the survey.  
25 The department will approve the survey criteria. Trolley  
26 equipment will not be used during a fan stoppage. If the  
27 survey provides affirmative results, which shall be  
28 provided to the department, the department shall approve  
29 a plan that provides:

30           (A) That permissible transportation equipment



1           shall be used if available.

2           (B) That evacuations shall begin within 15  
3 minutes after a ventilation interruption and shall  
4 proceed in an orderly and expedient manner.

5           (C) That the minimum number of vehicles will be  
6 used for the evacuation.

7           (D) That, during transportation, a certified  
8 person qualified to perform methane examinations  
9 riding in each vehicle shall continuously monitor for  
10 methane using a handheld detector and at specific  
11 locations designated by the operator based on the  
12 survey results. The speed of the vehicles shall not  
13 be so fast as to negate the detector's ability to  
14 accurately measure methane levels.

15          (E) That, if at any time during the evacuation  
16 methane is detected in an amount of .25% or more, the  
17 transportation vehicles will be deenergized and the  
18 evacuation completed on foot.

19          (F) That the operator, the department and the  
20 representative of the miners, if applicable, shall  
21 review the plan annually or more frequently if  
22 conditions warrant.

23          (iv) If ventilation is restored to normal water  
24 gauge before the evacuation is completed, a certified  
25 mine foreman, assistant mine foreman or mine examiner may  
26 start the reexamination of the mine, but all persons must  
27 continue to evacuate.

28          (v) The reexamination shall be made of the mine in  
29 the same manner as a preshift examination for a coal-  
30 producing shift before any power underground is

energized, including battery-powered or diesel-powered equipment, or before persons are permitted to enter the mine. The examination shall be made on foot, except an operator may use permissible transportation equipment on intake travelways only for reexamination after a fan stoppage if the examination is started within the time period established by the survey. The examination shall be recorded in the official mine record books used for examinations under section 218.

(5) The mine foreman shall notify the superintendent in writing whenever in his opinion the mine is becoming dangerous through the lack of ample ventilation at the face of entries, rooms and other portions of the mine, caused by the undue length of entries and airways or from any other cause, resulting in the accumulation of gas or coal dust, or both, in various portions of the mine. The superintendent shall thoroughly investigate the mine foreman's report and, if substantiated, order necessary work done to put the affected area in safe operating condition. It shall be the duty of the superintendent to immediately notify the department of the condition.

(6) The mine foreman shall see that every mine releasing explosive gas is kept free of standing methane, but any accumulation of explosive or noxious gases in the worked-out or abandoned portions of any mine shall be removed as soon as possible after its discovery, if it is practicable to remove it. No person endangered by the presence of explosive or noxious gases shall be allowed in that portion of the mine until the gases have been removed. The mine foreman shall direct and see that all dangerous places and the entrance or

entrances to worked-out and abandoned places in all mines are properly fenced off across the openings so that no person can enter, and that danger signals are posted upon said fencing to warn persons of the existing danger.

(7) When operations are temporarily suspended in a mine, the mine foreman shall see that danger signals are placed across the mine entrance, which signals shall be sufficient warning for unauthorized persons not to enter the mine. If the circulation of air through the mine be stopped, each entrance to the mine shall be fenced off in such a manner as will ordinarily prevent persons from entering the mine, and a danger signal shall be displayed upon the fence at each entrance and maintained in good condition. The mine foreman shall see that all danger signals used in the mine are in good condition and if any become defective, he shall notify the superintendent.

Section 212. Mine foreman's responsibility for working place safety.

The following shall apply:

(1) The mine foreman or assistant mine foreman shall direct and see that every working place is properly secured and shall see that no person is directed or permitted to work in an unsafe place, unless it be for the purpose of making it safe. The mine foreman shall see that workmen are provided with sufficient roof support materials delivered to their working place or places. When timbers are used for roof support, they shall be cut square on both ends and as near as practicable to proper length.

(2) Every workman in need of roof support materials shall notify the mine foreman or the assistant mine foreman

1 of the fact at least one day in advance, stating the roof  
2 support materials are required. In case of emergency, roof  
3 support materials may be ordered immediately upon the  
4 discovery of danger. If for any reason the necessary roof  
5 support materials cannot be supplied when required, the mine  
6 foreman or assistant mine foreman shall instruct the workmen  
7 to vacate the place until the material needed is supplied.

8 (3) The mine foreman or assistant mine foreman shall  
9 direct and see that, as the miners advance in their  
10 excavation, all dangerous and doubtful pieces of coal, slate  
11 and rock are taken down or immediately carefully secured  
12 against falling on the workmen. Any workman who neglects to  
13 carry out or disobeys the instructions of the mine foreman or  
14 assistant mine foreman, in regard to securing his working  
15 place, shall be suspended or discharged by the mine foreman,  
16 and if such negligence or disobedience results in serious  
17 injury or loss of life to any person, the mine foreman shall  
18 report the name of that workman to the department for  
19 prosecution under the requirements of this act.

20 (4) The mine foreman shall give prompt attention to the  
21 removal of all dangers reported to him by his assistants, the  
22 mine examiner or any other person working in the mine, and in  
23 case it is impracticable to immediately remove the danger, he  
24 shall notify every person whose safety is threatened to  
25 remain away from the area of the mine where the dangerous  
26 conditions exist.

27 (5) The mine foreman, his assistant or the mine examiner  
28 shall, once each week, travel and examine all the air  
29 courses, roads and openings that give access to old workings  
30 or falls and make a record in ink of the condition of all

1 places in the book provided for that purpose.

2 (6) It shall be the duty of the mine foreman to see that  
3 approved gas detection devices are used when and where  
4 required by this act. No approved gas detection device shall  
5 be entrusted to any person for use in a mine until the person  
6 has given satisfactory evidence to the mine foreman that he  
7 understands the proper use of the device and the danger of  
8 tampering with the device. The transportation of tools into  
9 and out of the mine shall be under the direction of the mine  
10 foreman or an assistant mine foreman.

11 (7) Instructions shall be given by the mine foreman,  
12 assistant mine foreman or mine examiner, or other authorized  
13 person, as to when, where and how roof supports shall be  
14 placed in order to avoid accidents from falls and to mine  
15 coal with safety to themselves and others. In addition, the  
16 mine foreman or assistant mine foreman shall give special  
17 care and attention to drawing pillars, particularly when  
18 falls are thereby being made.

19 Section 213. Mine foreman's responsibilities for blasting.

20 The following shall apply:

21 (1) The mine foreman shall direct that the coal is  
22 properly mined before it is blasted, shot or broken. For  
23 purposes of this paragraph, the term "properly mined" shall  
24 mean that the coal shall be undercut, centercut, overcut or  
25 sheared by pick or machine, and in any case the cutting shall  
26 be as deep as the holes are laid.

27 (2) The mine foreman or assistant mine foreman, under  
28 instructions from the mine foreman, shall direct that the  
29 holes for blasting shall be properly placed and shall  
30 designate the angle and depth of holes, which shall not be

1 deeper than the undercutting, centercutting, overcutting or  
2 shearing, the maximum quantity of explosives required for  
3 each hole and the method of charging and tamping.

4 (3) The mine foreman shall employ a sufficient number of  
5 competent and legally certified persons to act as shot-  
6 firers.

7 Section 214. Mine foreman's responsibilities for drainage.

8 The following shall apply:

9 (1) The mine foreman shall see that the work areas are  
10 kept as free from water as practicable during working hours.  
11 Except for individuals necessary to correct the condition,  
12 individuals shall not enter an area with such accumulations.

13 (2) A test drilling plan which provides for the safety  
14 of all individuals must be submitted by the operator to the  
15 department for approval. The department may increase the  
16 setback distances under this paragraph. Whenever any working  
17 place in a mine approaches within 50 feet of abandoned  
18 workings, as shown by surveys certified by a registered  
19 engineer or surveyor, or within 500 feet of any other  
20 abandoned workings of such mine, which cannot be inspected  
21 and which may contain dangerous accumulations of water or  
22 gas, or within 500 feet of any workings of an adjacent mine.

23 (3) No mining may occur within the setback distances  
24 under paragraph (2) unless the department approves the test  
25 drilling plan and gives permission to proceed.

26 (4) No water or gas from any portion of an abandoned  
27 mine, or from any idle portion of an active mine, and no  
28 borehole from the surface shall be tapped except under the  
29 immediate instruction and direction of the mine foreman with  
30 the use of approved gas detection equipment. It shall be

1 unlawful to work or employ individuals to work in any portion  
2 of a bituminous coal mine in which a body of water is dammed  
3 or held back at a higher elevation in the same mine by  
4 natural or artificial means, unless approval is given in  
5 writing by the department.

6 (5) The department shall not accept from an operator a  
7 six-month mine subsidence map as required by the act of April  
8 27, 1966 (1st Sp.Sess. P.L.31, No.1), known as The Bituminous  
9 Mine Subsidence and Land Conservation Act, unless the map  
10 includes the information required by paragraphs (2), (3) and  
11 (4).

12 Section 215. Mine foreman's responsibility for employment of  
13 competent persons.

14 A noncertified person may not be employed to operate  
15 equipment in a mine until the individual has completed a  
16 training program approved by the department and has given the  
17 mine foreman satisfactory proof that the individual can do the  
18 assigned work without endangering anyone.

19 Section 216. Mine foreman's responsibilities for inspections  
20 and reports.

21 The following shall apply:

22 (1) In all mines, the mine foreman shall employ a  
23 sufficient number of assistants to ensure a visit to each  
24 employee during each shift, except mine officials and miners  
25 whose normal duties require travel throughout the mine,  
26 either by himself or his assistants.

27 (2) The mine foreman shall each day enter plainly and  
28 sign in ink a report of the condition of the mine in a book  
29 provided for that purpose. The report shall clearly state any  
30 danger that may have come under his observation during the

1 day or any danger reported by the assistant mine foreman or  
2 the mine examiners. The report shall also state whether or  
3 not a proper supply of material is on hand for the safe  
4 working of the mine, and whether or not the requirements of  
5 law are complied with. The mine foreman shall also, once each  
6 week, enter plainly in ink in the book a true report of all  
7 weekly air measurements required by this act, designating the  
8 place, the area of each cut-through and entry separately, the  
9 velocity of the air in each cut-through and entry, the  
10 quantity of the air in each cut-through and entry and the  
11 number employed in each separate split of air, with the date  
12 when measurements were taken. The book shall at all times be  
13 kept in the mine office, for examination by the department,  
14 any person working in the mine or authorized representatives  
15 of the employees of the mine, in the presence of the  
16 superintendent or the mine foreman. The mine foreman shall  
17 also each day read carefully and countersign in ink all  
18 reports entered in the record book of the mine examiners.

19 (3) When assistant mine foremen are employed, their duty  
20 shall be to assist the mine foreman in complying with the  
21 provisions of this act, and they shall be liable to the same  
22 penalties as the mine foreman for any violation of this act  
23 in parts or portions of the mine under their jurisdiction. At  
24 the end of each shift, each assistant mine foreman shall make  
25 a report in a book provided for that purpose, giving the  
26 general condition as to safety of the working places visited,  
27 and shall make a note of any unusual occurrence observed  
28 during the shift. The mine foreman shall read carefully the  
29 daily report of each assistant mine foreman and shall sign  
30 the report in ink daily. Where more than one portal is being



1       used for the entrance of miners into a mine, the mine foreman  
2       may designate an assistant who holds a mine foreman  
3       certificate to sign the assistant mine foreman's and mine  
4       examiner's daily report books at each portal other than the  
5       main portal.

6           (4) It shall be the duty of the mine foreman or  
7       assistant mine foreman, or an authorized person designated by  
8       the mine foreman, to examine daily in a general way all  
9       electrical equipment and other machinery under his  
10      jurisdiction to see that it is in safe operating condition  
11      and make a report in the assistant mine foreman's daily  
12      report book. It shall be the duty of the mine electrician to  
13      make and sign a written report once each week in a record  
14      book provided for that purpose, stating the condition of  
15      electrical equipment and other machinery in the mine. The  
16      report shall be countersigned by the mine foreman.

17 Section 217. Employment of mine examiners.

18       The mine foreman shall employ a sufficient number of mine  
19      examiners in order that each mine can be examined in accordance  
20      with the provisions of this act. The mine foreman or the  
21      assistant mine foreman shall see that the mine examiner has left  
22      his initials and date and time in places examined or reported as  
23      examined.

24 Section 218. Duties of mine examiners.

25       (a) Examination of mine.--Within three hours immediately  
26      preceding the beginning of a coal-producing shift and before any  
27      workmen in such shift, other than those who may be designated to  
28      make the examinations prescribed in this section, enter the  
29      underground areas of the mine, the mine foreman, assistant mine  
30      foreman or examiners designated by the mine foreman of the mine

1 to do so shall make an examination, as prescribed in this  
2 section, of the areas. Each person designated to act as a mine  
3 examiner shall be directed to examine a definite underground  
4 area of such mine, and in making his examination, the mine  
5 examiner shall inspect every active working place and places  
6 immediately adjacent in the area and make tests with an approved  
7 gas detection device for accumulations of methane and oxygen-  
8 deficiency in the air. The mine examiner shall examine seals and  
9 doors to determine whether they are functioning properly;  
10 inspect and test the roof, face and rib conditions in the  
11 working places; inspect active roadways, every unfenced roadway,  
12 travelways, approaches to abandoned workings, and accessible  
13 falls in active sections for explosive gas and other hazards;  
14 and inspect to determine whether the air in each split is  
15 traveling in its proper course and in normal volume. The mine  
16 examiner shall initial and date the face of each place he  
17 examines or in a nearby location. If the mine examiner in making  
18 his examination, finds a condition which he considers to be  
19 dangerous to persons who may enter or be in such area, he shall  
20 indicate such dangerous place by posting a "danger" sign  
21 conspicuously at a point which persons entering such dangerous  
22 place would be required to pass. No person, other than Federal  
23 or State mine inspectors, or the mine foreman or his assistant,  
24 or persons authorized by the mine foreman or assistant mine  
25 foreman to enter the place for the purpose of eliminating the  
26 dangerous condition, shall enter the place while the sign is  
27 posted.

28 (b) Record book.--A suitable record book shall be kept at  
29 the mine office, on the surface, of every mine where mine  
30 examiners are employed, and immediately after the examination of

1 the mine or any portion thereof by a mine examiner, whose duty  
2 it is to make the examination, he shall enter in the book, with  
3 ink, a record of the examination, and sign the same. This record  
4 shall show the time taken in making the examination, and also  
5 clearly state the nature and location of any danger that may  
6 have been discovered in any room or entry or other place in the  
7 mine, and if any danger has been discovered, the mine examiners  
8 shall immediately report the location thereof to the mine  
9 foreman. No person shall enter the mine until the mine examiners  
10 return to the mine office on the surface, or to a station  
11 located in the intake entry of the mine, where a record book as  
12 provided for in this section shall be kept in a fireproof vault  
13 and signed by the person making the examination, and report to  
14 the mine foreman or the assistant mine foreman, by telephone or  
15 otherwise, and a written report made thereof by the person  
16 receiving the report, that the mine is in safe condition for  
17 individuals to enter. When a station is located in any mine, it  
18 shall be the duty of the mine examiners to sign the report  
19 entered in the record book in the mine office on the surface.  
20 The record books of the mine examiners shall at all times during  
21 working hours be accessible to the mine inspector, any person  
22 working in the mine and authorized representatives of the  
23 employees of the mine.

24 (c) Second examination.--A second examination by the same or  
25 other mine examiner shall be made during working hours of every  
26 working area where men are employed, and a report of the  
27 examination shall be made in the mine examiner report book in  
28 the same manner as the first examination. No person on a  
29 noncoal-producing shift, other than a certified person  
30 designated under this subsection, shall enter any underground

1 area in a mine, unless the area, which shall include all places  
2 on that particular split of air, has been examined as prescribed  
3 in this section within three hours immediately preceding his  
4 entrance into the area.

5 Section 219. Management of mine.

6 The right to hire and discharge employees, management of the  
7 mine and the direction of the working forces are vested  
8 exclusively in the operator, and no person or persons,  
9 association or associations, organization or organizations or  
10 corporation or corporations shall interfere with or attempt to  
11 interfere with, abridge or attempt to abridge, in any manner  
12 whatsoever, such right, provided that this does not invalidate  
13 any existing or future contract.

14 Section 220. Duties of superintendent.

15 (a) General rule.--It shall be the duty of every  
16 superintendent, on behalf and at the expense of the operator, to  
17 keep on hand at each mine at all times a sufficient quantity of  
18 all materials and supplies required to preserve the health and  
19 safety of the employees, as ordered by the mine foreman and  
20 required by this act. If, for any reason, the superintendent  
21 cannot procure the necessary materials or supplies, he shall  
22 immediately notify the mine foreman, whose duty it shall be to  
23 withdraw all individuals from the mine, or portion of the mine,  
24 until the materials or supplies are received.

25 (b) Examination.--The superintendent shall, at least once  
26 every week, read, examine and countersign all reports entered in  
27 the mine record book, and if he finds on examination that the  
28 law is being violated, the superintendent shall order the mine  
29 foreman to stop the violation and shall see that the order is  
30 complied with.

1 Section 221. Qualifications and general responsibility of  
2 superintendent.

3 The following shall apply:

4 (1) Beginning one year after the effective date of this  
5 paragraph, no person may be appointed as a superintendent at  
6 any mine in this Commonwealth unless the person holds a  
7 current, valid mine foreman certificate. In the event that a  
8 superintendent is found by the department to be in breach of  
9 his or her responsibilities as superintendent, the department  
10 may suspend or revoke the superintendent's mine foreman  
11 certificate.

12 (2) No person may serve as the superintendent for more  
13 than one mine.

14 (3) The superintendent shall not obstruct the mine  
15 foreman or other officials in the fulfillment of any of their  
16 duties as required by this act, but shall direct, provide the  
17 means and see to it that the mine foreman and all the other  
18 employees under him comply with the law. The superintendent  
19 shall give immediate attention to any violation of the law  
20 called to his attention by the department. The superintendent  
21 shall be responsible for all the outside workings and all the  
22 persons there employed. At any mine where a superintendent is  
23 not employed, the duties that are prescribed for the  
24 superintendent shall devolve upon the mine foreman, in  
25 addition to his regular duties.

26 Section 222. Danger signals.

27 The superintendent of every mine shall provide a sufficient  
28 number of danger signals, upon request of the mine foreman,  
29 which the mine foreman or the assistant mine foreman shall  
30 distribute in the mine at places convenient for the use of the

1 mine examiners and other officials in the fulfillment of their  
2 duties. Danger signals in all mines shall be uniform and of a  
3 design approved by the department. All danger signals shall be  
4 kept in good condition and no defective signal shall be used in  
5 any mine.

6 Section 223. Supply of record books.

7 The superintendent shall keep on hand at the mine a supply of  
8 the record books required by this act and shall see that record  
9 books are delivered to the proper persons at the mine and that  
10 they are properly cared for.

11 Section 224. Mapping requirements and surveying standards.

12 (a) General rule.--The operator or superintendent of each  
13 mine shall cause to be made by a registered mining engineer or  
14 registered professional surveyor an accurate, professional  
15 quality map of the mine, on a scale of not less than 200 feet to  
16 the inch. At a minimum, the map shall show:

17 (1) A complete legend identifying all features  
18 represented on the map and a title block including all  
19 changes of mine ownership and the dates of those changes.

20 (2) An accurate delineation of the current extent of the  
21 workings of the mine and all mines or coal lands, or both,  
22 inside the permit boundary and all mines or coal lands, or  
23 both, within 1,000 feet of the outside of the permit  
24 boundary. The delineation must show all workings of all mines  
25 above and below the mine within the permit boundary and  
26 within 1,000 feet of the outside of the permit boundary.

27 (3) Barrier pillars for all mine workings inside the  
28 permit boundary and all mine workings adjacent to the permit  
29 boundary.

30 (4) Two permanent baseline points coordinated with the

1 underground and surface traverse points, and two permanent  
2 elevation benchmarks referencing mine elevation surveys. The  
3 baseline points and elevation benchmarks shall be prepared  
4 using the Pennsylvania State Plan Coordinate System (NAD83  
5 Datum). In the alternative, the map shall include coordinate  
6 transformation equations converting the baseline points shown  
7 to correlate to the Pennsylvania State Plan Coordinate  
8 System.

9 (5) All openings, excavations, shafts, slopes, drifts,  
10 tunnels, entries, crosscuts, rooms, boreholes and all other  
11 excavations, including surface pits and auger holes in each  
12 seam.

13 (6) Areas where the pillars or longwall panels have been  
14 removed.

15 (7) The name or number of each butt, room and section,  
16 if available.

17 (8) Ventilation controls, air splits and the direction  
18 of air currents using arrows.

19 (9) USGS elevation at the top and bottom of each shaft,  
20 slope, drift and borehole.

21 (10) Bottom of coal elevations, taken at intervals not  
22 to exceed 300 feet apart, in one entry of each section and in  
23 one entry of each set of rooms off such sections.

24 (11) Bottom of coal elevations taken in the last open  
25 crosscut of all sections and each set of rooms off such  
26 section before they are abandoned.

27 (12) Elevation contour lines at whole number ten-foot  
28 increments, unless the seam is steeply pitching, after which  
29 it may be 25-foot intervals.

30 (13) The number or designation of each survey station

1 and the date of the last survey in the entries, as they are  
2 represented on the map.

3 (14) The location and elevation of any body of water  
4 dammed or held back in any portion of the mine, giving the  
5 volume in gallons of the body of water.

6 (15) The location of streams, rivers, lakes, dams or any  
7 other bodies of water on the surface, with their surface  
8 elevations accurately and plainly marked.

9 (16) The location of permanent surface features such as  
10 railroad tracks, public highways, permanent buildings and oil  
11 and gas wells.

12 (17) All seals and bulkheads within the mine.

13 (b) Accuracy standards.--The following accuracy standards  
14 must be met:

15 (1) A minimum elevation closure of plus or minus one  
16 foot per 5,000 feet is required.

17 (2) Mine traverse, advanced by closed loop method of  
18 survey or other equally accurate method of traversing.

19 Minimum angular and coordinate ties for raw data would be an  
20 angular tie of less than one minute and a coordinate time of  
21 greater than 1 to 10,000 for any given closed loop survey.

22 (c) Surveying standards.--The extent of surveying shown on  
23 the map shall be acceptable where the following minimum  
24 underground surveying standards are met:

25 (1) Every entry must be surveyed at intervals not to  
26 exceed 300 lineal feet. Survey station spads shall be  
27 established in each entry of all mains, sections, butts,  
28 rooms and other excavations. Survey lines may extend from  
29 adjacent entries as long as the interval between survey  
30 station spads within an entry does not exceed 300 lineal



1 feet. Continuous survey lines must be maintained in at least  
2 one entry.

3 (2) Lateral take-ups, left and right, must be taken in  
4 every entry at all intersections and must denote the location  
5 of all intersections and define the corners and the location  
6 of the rib line within each entry. For any excavation greater  
7 than 20% from the planned excavation, additional lateral  
8 take-ups must be taken to define this area. All of the  
9 information must be accurately portrayed on the mine map.

10 (3) All workings not surveyed and taken from a working  
11 map or other unofficial record shall be shown on the map with  
12 dashed lines. The legend shall identify that these areas have  
13 not been surveyed.

14 (4) A survey station spad is required to be within 300  
15 feet of the deepest penetration of the final faces of each  
16 mining section, butt or room. The number or designation of  
17 the last survey station spad and the date of such survey of  
18 the entries are to be shown on the mine map. The area from  
19 this spad to the face will be considered surveyed provided  
20 that lateral and face take-ups have been completed and  
21 recorded in the field book and shown on the mine map. Field  
22 books shall be available for inspection. If lateral and face  
23 take-ups are not completed, the area inby the last survey  
24 station spad must be identified on the map with dashed lines.  
25 The survey station spads located in each mining section, butt  
26 or room shall be tied to a check survey station.

27 (5) Check survey stations shall be advanced to within  
28 300 feet of the deepest penetration of all mains, submains,  
29 sections and butts. Check survey stations shall be advanced  
30 to within 600 feet of the deepest penetration of all rooms.

1           (6) Check survey stations shall be advanced to within  
2       100 feet of the deepest penetration of all mining sections,  
3       butts, rooms and excavations adjacent to the permit or  
4       property boundary lines.

5       (d) Verification.--Prior to each area's being sealed, the  
6       operator or superintendent shall verify in writing that the map  
7       of the sealed area meets the requirements of this act. To the  
8       extent that any areas in the mine cannot be surveyed, these  
9       areas shall be indicated on the map.

10   Section 225. Availability of copy of map.

11       A true copy of the map made pursuant to section 224 shall be  
12       kept in the mine office for the use of the mine officials and  
13       mine inspector in the district, and for the inspection, in the  
14       presence of the superintendent or mine foreman, of any person  
15       working in the mine, or of authorized representatives of the  
16       employees of the mine, whenever the person or representative  
17       fears that any working place is becoming dangerous by reason of  
18       its proximity to other workings that may contain dangerous  
19       accumulations of water or noxious gases.

20   Section 226. Excavations on map.

21       At least once every six months, the operator or  
22       superintendent of every mine shall cause to be shown accurately  
23       on the original map of the mine, and on the copy of the map in  
24       the mine office, all the excavations made during the time that  
25       elapsed since the excavations were last shown.

26   Section 227. Furnishing copies of maps.

27       A copy of the mine map shall be furnished every six months to  
28       the department. When more than one seam of coal is being worked  
29       in any mine, the department shall be provided with a separate  
30       copy of the original map of the complete workings of each seam

1 as provided for under this act. The copies shall remain in the  
2 care of the department. When one mine is working a seam of coal  
3 under another mine that is working an overlying seam and the two  
4 mines are operated by different operators, the operators shall  
5 exchange with each other copies of their respective mine maps,  
6 showing such portions of their respective mines as may be  
7 directly above or below the other mine.

8 Section 228. Duties upon abandonment of mine.

9 (a) General rule.--If a mine is inactive for a period of 60  
10 days or more or if the operator intends to cease ventilation of  
11 the mine, the operator or the superintendent shall notify the  
12 department at once and shall, within 60 days, extend the  
13 official map to show clearly all worked-out or abandoned  
14 territory with all excavations, property and boundary lines,  
15 elevations and map features as required under this act or, if  
16 the workings are not accessible, provide a copy of the most  
17 recent map available that is clearly marked to state that the  
18 workings shown were not surveyed. The owner or operator of the  
19 mine shall also, within 45 days after its change in status, send  
20 to the department a tracing, print or digital map in a format  
21 acceptable to the department of the complete original map. The  
22 registered mining engineer or registered surveyor shall certify  
23 that the tracing, print or digital map is a true and correct  
24 copy of the original map of the mine and that the original map  
25 is a true, complete and correct map and survey of all the  
26 excavations made in the inactive or abandoned mine. A dated  
27 statement signed by a company or corporate officer stating that  
28 the map represents a complete and accurate representation of all  
29 underground excavations and is the final map of the mine, or  
30 stating that the map provided is not a surveyed final map due to

1   inaccessibility of the workings, shall be included.

2       (b) Violation.--If the operator, superintendent or company  
3   or corporate officer fails to provide the certified final map or  
4   recklessly or intentionally submits an inaccurate certified map,  
5   the violation shall be a felony subject to prosecution under  
6   section 505. Costs incurred by the Commonwealth as a result of a  
7   violation of this subsection may be recovered as restitution.

8   Section 229. Survey by department.

9       If the department has reasonable cause to believe that a map  
10  of any mine furnished under the provisions of this act is  
11  inaccurate or imperfect, the department may require the operator  
12  to make a survey and a new map of the mine.

13  Section 230. Ventilation requirements.

14       (a) General rule.--The operator or superintendent of a mine  
15  shall provide and maintain ample means of ventilation to furnish  
16  a constant and adequate supply of pure air for the employees.  
17  The quantity and velocity of the current of air shall be  
18  sufficient to dilute so as to render harmless and carry away  
19  flammable or harmful gases.

20       (b) Specification.--The quantity of air reaching the last  
21  open crosscut in any pair or set of entries shall not be less  
22  than 9,000 cubic feet per minute. All active underground work  
23  areas in a mine shall be ventilated by a current of air  
24  containing not less than 19.5% oxygen and not more than .5%  
25  carbon dioxide and no harmful quantities of other noxious or  
26  poisonous gases.

27       (c) Ventilating belt entries.--A belt conveyor entry shall  
28  be isolated from the adjacent entries.

29           (1) The following requirements apply:

30               (i) The quantity of air traveling in the belt

1 conveyor shall be kept to the minimum quantity necessary  
2 for effective ventilation by means of permanent stoppings  
3 and regulators.

4 (ii) The belt conveyor entry shall be provided with  
5 a separate split of intake air.

6 (iii) The belt conveyor entry shall provide an  
7 intake escapeway to the main air current.

8 (2) If an operator proposes to use entries in common  
9 with the belt conveyor entry, the operator must submit a plan  
10 to and obtain approval by the department that addresses the  
11 following criteria:

12 (i) The belt conveyor is cleaned and maintained to  
13 minimize float dust in the common entries.

14 (ii) Stoppings and regulators are arranged to reduce  
15 the quantity of air traveling in the belt and common  
16 entries to a minimum for effective ventilation of the  
17 belt and common entries and to provide an intake air  
18 split as an escapeway to the main air current.

19 (iii) Fire protection is installed and maintained on  
20 all belt conveyors in compliance with appropriate  
21 standards.

22 (iv) There is an early warning fire detection system  
23 and carbon monoxide (CO) or smoke sensors that meet the  
24 requirements of 30 CFR § 75.351 (relating to atmospheric  
25 monitoring systems). The spacing of the CO/smoke sensors  
26 shall not exceed 1,000 feet. The belt air velocity shall  
27 be a minimum of 50 fpm or CO/smoke sensor spacing shall  
28 be reduced to provide an adequate alarm time not to  
29 exceed 20 minutes. The CO/smoke sensors shall be set to  
30 alarm at the lowest practicable setting and be positioned

1 in the ventilation current to provide the most effective  
2 detection.

3 (v) The number of common entries may not exceed  
4 three entries, including the belt entry.

5 (vi) Development for common entries is designed to  
6 be at a lower ventilation pressure than the main intake  
7 escapeway.

8 (vii) If a condition develops that causes the belt  
9 and common entries to be at a higher ventilation pressure  
10 than the main intake escapeway, efforts are undertaken to  
11 immediately correct the condition. If the condition  
12 cannot practicably be corrected, the mine operator must  
13 notify the department of the condition, the specific  
14 cause, the area affected and the steps that will be taken  
15 to maintain the pressure in the belt and common entries  
16 at the lowest attainable level.

17 (viii) When the belt ventilation current travels  
18 away from the working section, no ignition sources,  
19 except equipment necessary to maintain the escapeway and  
20 personnel carriers, shall be permitted in the intake  
21 escapeway unless CO/smoke sensors that meet Federal fire  
22 detection standards are installed in the intake  
23 escapeway. Equipment operated in the intake escapeway  
24 shall be equipped with an automatic fire suppression  
25 system, or comply with 30 CFR § 75.380(f)(4) (relating to  
26 escapeways; bituminous and lignite mines). CO detectors  
27 shall give an audible alarm over the mine communication  
28 system. The alarm shall indicate the conveyor belt flight  
29 where the alarm occurred. Both visual and audible alarm  
30 signals must automatically be provided at all affected

1 working sections and affected areas where mechanized  
2 mining equipment is being installed or removed and on the  
3 surface at a monitored location. Two-way underground  
4 communications shall be maintained between the monitored  
5 surface location and all underground working sections and  
6 areas where mechanized mining equipment is being  
7 installed or removed.

8 (ix) A copy of the mine's federally approved  
9 firefighting and evacuation plan is included with the  
10 plan.

11 (d) Actions to detect and respond to excess methane.--The  
12 following actions are required to detect and respond to excess  
13 methane:

14 (1) Location of tests. Tests for methane concentrations  
15 under this section shall be made at least 12 inches from the  
16 roof, face, ribs and floor.

17 (2) Working places and intake air courses.

18 (i) When 1% or more methane is present in a working  
19 place or an intake air course, including an air course in  
20 which a belt conveyor is located or in an area where  
21 mechanized mining equipment is being installed or  
22 removed:

23 (A) Except intrinsically safe atmospheric  
24 monitoring systems (AMS), electrically powered  
25 equipment in the affected area shall be deenergized  
26 and other mechanized equipment shall be shut off.

27 (B) Changes or adjustments shall be made  
28 immediately to the ventilation system to reduce the  
29 concentration of methane to less than 1%.

30 (C) No other work shall be permitted in the

1           affected area until the methane concentration is less  
2           than 1%.

3           (ii) When 1.5% or more methane is present in a  
4           working place or an intake air course, including an air  
5           course in which a belt conveyor is located or in an area  
6           where mechanized mining equipment is being installed or  
7           removed:

8                   (A) Except for Federal or State mine inspectors,  
9                   the mine foreman or assistant mine foreman or persons  
10                  authorized by the mine foreman or assistant mine  
11                  foreman, all persons shall be withdrawn from the  
12                  affected area.

13                  (B) Except for intrinsically safe AMS,  
14                  electrically powered equipment in the affected area  
15                  shall be disconnected at the power source.

16       (3) Return air split.

17           (i) When 1% or more methane is present in a return  
18           air split between the last working place on a working  
19           section and where that split of air meets another split  
20           of air or the location at which the split is used to  
21           ventilate seals or worked-out areas, changes or  
22           adjustments shall be made immediately to the ventilation  
23           system to reduce the concentration of methane in the  
24           return air to less than 1%.

25           (ii) When 1.5% or more methane is present in a  
26           return air split between the last working place on a  
27           working section and where that split of air meets another  
28           split of air or the location where the split is used to  
29           ventilate seals or worked-out areas, except for Federal  
30           or State mine inspectors, the mine foreman or assistant



1 mine foreman or persons authorized by the mine foreman or  
2 assistant mine foreman, all persons shall be withdrawn  
3 from the affected area.

4 (iii) Other than intrinsically safe AMS, equipment  
5 in the affected area shall be deenergized, electric power  
6 shall be disconnected at the power source and other  
7 mechanized equipment shall be shut off.

8 (iv) No other work shall be permitted in the  
9 affected area until the methane concentration in the  
10 return air is less than 1%.

11 (4) Return air split alternative.

12 (i) The provisions of this paragraph may apply if:

13 (A) The quantity of air in the split ventilating  
14 the active workings is at least 27,000 cubic feet per  
15 minute in the last open crosscut or the quantity  
16 specified in the approved ventilation plan, whichever  
17 is greater.

18 (B) The methane content of the air in the split  
19 is continuously monitored during mining operations by  
20 an AMS that gives a visual and audible signal on the  
21 working section when the methane in the return air  
22 reaches 1.5% and the methane content is monitored as  
23 specified in the approved ventilation plan.

24 (C) Rock dust is continuously applied with a  
25 mechanical duster to the return air course during  
26 coal production at a location in the air course  
27 immediately outby the most inby monitoring point.

28 (ii) When 1.5% or more methane is present in a  
29 return air split between a point in the return opposite  
30 the section loading point and where that split of air

1 meets another split of air or where the split of air is  
2 used to ventilate seals or worked-out areas:

3 (A) Changes or adjustments shall be made  
4 immediately to the ventilation system to reduce the  
5 concentration of methane in the return air less than  
6 1.5%.

7 (B) Except for Federal or State mine inspectors,  
8 the mine foreman or assistant mine foreman or persons  
9 authorized by the mine foreman or assistant mine  
10 foreman, all persons shall be withdrawn from the  
11 affected area.

12 (C) Except for intrinsically safe AMS, equipment  
13 in the affected area shall be deenergized, electric  
14 power shall be disconnected at the power source and  
15 other mechanized equipment shall be shut off.

16 (D) No other work shall be permitted in the  
17 affected area until the methane concentration in the  
18 return air is less than 1.5%.

19 (e) Changes and adjustments in ventilation.--

20 (1) If either the concentration of methane in a bleeder  
21 split of air immediately before the air in the split joins  
22 another split of air, or in a return air course other than as  
23 described in subsection (d)(3) and (4), contains methane gas  
24 in an amount of 1% or greater as detected by an approved gas  
25 detection device, changes or adjustments shall be made  
26 immediately in the ventilation in the mine so that returning  
27 air contains less than 1% of methane gas.

28 (2) When 2% of methane is exceeded in a bleeder return,  
29 the operator shall submit a written plan to abate the problem  
30 to the department for approval.

(f) Submittal of detailed ventilation plan to department.--

(1) A mine operator shall submit a detailed ventilation plan and any addendums to the department for review and comment. The mine operator shall review the plan with the department and address concerns to the extent practicable. The department shall submit any concern that is not addressed to MSHA through comments to the plan. The mine operator shall provide a copy of the plan to the representative of the miners, if applicable, ten days prior to the submittal of the plan for review and comment to the department.

(2) The operator shall give the department a copy of the MSHA-approved plan and any addendums as soon as the operator receives the approval.

(3) In the event of an unforeseen situation requiring immediate action on a plan revision, the operator shall submit the proposed revision to the department and the representative of the miners when the proposed revision is submitted to MSHA. The department shall work with the operator to review and comment on the proposed plan revision to MSHA as quickly as possible.

(4) Upon approval by MSHA, the plan is enforceable by the department.

#### Section 231. Crosscuts and stoppings.

(a) Maximum distance.--

(1) The distance driven to establish ventilation connections between entries or rooms shall not exceed 200 linear feet. Where adequate ventilation is provided, the entry or room may be driven in conjunction with the new air connection, provided that the distance to either face does not exceed 200 linear feet when the new air connection is

1 established.

2 (2) In no case shall any place be driven a total of more  
3 than 200 linear feet unless ventilation connections have been  
4 established, except as provided under this act.

5 (3) Where adequate ventilation can be provided, the  
6 department may give written permission to authorize a greater  
7 distance.

8 (b) Closure of crosscuts.--Crosscuts between intakes and  
9 return air courses shall be closed, except the one nearest the  
10 face. Crosscuts between rooms shall be closed, where necessary  
11 or when required by the department, to provide adequate  
12 ventilation at the working face.

13 (c) Air connections.--Where practicable, an air connection  
14 shall be provided at or near the face of each entry or room  
15 before the place is abandoned.

16 (d) Excavations.--Excavations shall not exceed 18 feet in  
17 depth, unless permission is obtained from the department to  
18 drive a greater distance beyond the last open crosscut, if such  
19 excavations are kept free of accumulations of methane by use of  
20 line brattice or other adequate means.

21 (e) Construction materials of stoppings.--A permanent  
22 stopping shall be built of solid, substantial, incombustible  
23 material, including, but not limited to, concrete, concrete  
24 blocks, bricks, steel or tile, provided that, where physical  
25 conditions exist because of caving that makes the use of  
26 concrete, concrete blocks, brick, steel or tile impracticable,  
27 timber laid longitudinally skin-to-skin or an approved  
28 substitute may be used. A temporary stopping may be erected in  
29 cut-throughs near the working face. A stopping shall be  
30 reasonably airtight.

(f) Building and maintenance.--A permanent stopping or other permanent ventilation control device shall be built and maintained as follows:

(1) Between intake and return air courses, except a temporary control, the device may be used in a room that is 600 feet or less from the centerline of the entry from which the room was developed, including where continuous face haulage systems are used in the room. Unless otherwise approved in the ventilation plan, the stopping or control shall be maintained to and including the third connecting crosscut outby the working face.

(2) To separate belt conveyor haulageways from intake air courses when the air in the intake air courses is used to provide air to active working places, temporary ventilation controls may be used in a room that is 600 feet or less from the centerline of the entry from which the room was developed, including where continuous face haulage systems are used in the room. When continuous face haulage systems are used, a permanent stopping or other device shall be built and maintained to the outby most point of travel of the dolly or 600 feet from the point of deepest penetration in the conveyor belt entry, whichever distance is closer to the point of deepest penetration, to separate the continuous haulage entry from the intake entries.

#### Section 232. Overcasts and undercasts.

(a) Arrangement of ventilation.--Ventilation shall be so arranged by means of air locks, overcasts or undercasts that the passage of trips or persons along the entries will not cause interruptions of the air current. In face areas where it is impracticable to install air locks, single doors may be used

1 with the permission of the department. An air lock shall be  
2 ventilated sufficiently to prevent accumulations of methane in  
3 it.

4 (b) Doors.--

5 (1) A door controlling ventilation shall be kept closed,  
6 except when men or equipment are passing through the doorway.  
7 Motor crews and other persons who open a door shall see that  
8 the door is closed before leaving it.

9 (2) It shall be unlawful for a person to knowingly leave  
10 a door or a check-curtain open.

11 (c) Hanging of doors.--A door controlling ventilation shall  
12 be hung in such a manner as to be self-closing.

13 (d) Construction materials.--Overcasts and undercasts shall  
14 be constructed tightly of incombustible material, such as  
15 masonry, concrete, concrete blocks or fire-resistant  
16 prefabricated material of sufficient strength to withstand  
17 possible falls from the roof. Overcasts and undercasts shall be  
18 of ample area to pass the required quantity of air and shall be  
19 kept clear of obstructions.

20 Section 233. Line brattice.

21 (a) General rule.--Substantially constructed line brattice  
22 shall be used from the last open crosscut of an entry or room  
23 when necessary or required by the department to provide adequate  
24 ventilation for the workmen and to remove gases and explosive  
25 fumes. When damaged by falls or otherwise, line brattice shall  
26 be repaired promptly.

27 (b) Spacing.--The space between the line brattice and the  
28 rib shall be large enough to permit the flow of a sufficient  
29 volume of air to keep the working face clear of flammable and  
30 noxious gases.

(c) Construction material.--Brattice cloth used underground shall be constructed of approved flame-resistant material.

Section 234. Auxiliary blowers and fans.

(a) Procedure.--

(1) The operator of a mine who desires to use in the mine an auxiliary blower or exhaust fan shall submit to the department a ventilation plan showing the proposed use of the auxiliary blower or exhaust fan.

(2) The department shall review the plan and take one of the following actions:

(i) Approve the plan.

(ii) Request additional information.

(iii) Disapprove the plan and set forth in writing its reasons for the disapproval.

(3) In approving a plan, the department shall require that an auxiliary blower or exhaust fan shall be:

(i) Powered by an approved motor when installed underground.

(ii) Operated continuously while any work is being performed in the area being ventilated by the blower or fan.

(iii) Be so placed that recirculation of the air is not possible.

(b) Time period for review.--The department shall approve or disapprove a plan within 60 days after being initially submitted by the operator.

Section 235. Unused and abandoned parts of mines.

An area that is not sealed shall be ventilated. Return air may be used to ventilate the area. The department shall approve a ventilation plan for an abandoned, unused or sealed part of a

1 mine.

2 Section 236. Sewage dumping prohibited.

3 If any person shall construct or cause to be constructed for  
4 use after the effective date of this section a sewer or other  
5 method of drainage from a building or dwelling house for the  
6 carrying of sewage, offal, refuse or other offensive matter into  
7 any portion of an operating or abandoned mine, the person  
8 commits a misdemeanor of the third degree.

9 Section 237. Fans.

10 (a) General rule.--The ventilation of a mine that extends  
11 more than 200 feet underground and is opened after the effective  
12 date of this section shall be produced by a mechanically  
13 operated fan or fans. The fan or fans shall be kept in  
14 continuous operation unless written permission to do otherwise  
15 is granted by the department.

16 (b) Location.--Except as otherwise provided under subsection

17 (c), a main fan shall be:

18 (1) Located on the surface in fireproof housing offset  
19 not less than 15 feet from the nearest side of the mine  
20 opening.

21 (2) Equipped with fireproof air ducts provided with  
22 explosion doors or a weakwall.

23 (3) Operated from a separate power circuit.

24 (c) Exception.--In lieu of the requirements for the location  
25 of fans and pressure-relief facilities, a fan may be directly in  
26 front of or over a mine opening if:

27 (1) The opening is not in direct line with possible  
28 forces coming out of the mine if an explosion occurs.

29 (2) There is another opening having a weakwall stopping  
30 or explosion doors that would be in direct line with forces



1 coming out of the mine.

2 All main fans shall be provided with pressure-recording gauges  
3 or water gauges.

4 (d) Recordkeeping and inspections.--

5 (1) A record of the charts shall be kept for one year.

6 (2) A daily inspection shall be made of all main fans  
7 and connected machinery by a competent person and a record  
8 kept of the inspection in a book prescribed for that purpose.

9 (e) Warning of fan interruption.--Approved facilities shall  
10 be provided at a point or points under observation while men are  
11 in the mine and shall give warning of an interruption to a fan.  
12 Where such facilities are not provided, an attendant shall be  
13 constantly kept on duty while individuals are working in the  
14 mine.

15 Section 238. Measurement of methane.

16 The mine foreman or superintendent shall once each week  
17 direct and see that the methane content of the ventilating  
18 current or currents is determined by analyses or by an  
19 instrument capable of accuracy to .1%. The samples or the  
20 determinations shall be taken on the return end of the air  
21 circuit or circuits just beyond the last working place, unless  
22 otherwise directed by the department, and a correct report of  
23 these determinations shall be promptly furnished to the  
24 department. The determinations or samples shall be taken on days  
25 when individuals are working and recorded in a book provided for  
26 that purpose.

27 Section 239. Control of coal dust and rock dusting.

28 (a) Method of removal.--

29 (1) Dangerous accumulations of fine, dry coal dust shall  
30 be removed from a mine or neutralized by the application of

1 rock dust, and all dry and dusty operating sections and  
2 haulageways and the back entries for at least 1,000 feet  
3 outby the first active working place in each operating  
4 section shall be kept watered down, rock dusted or dust  
5 allayed by such other methods as may be approved by the  
6 department.

7 (2) A mine or location in a mine that is too wet or too  
8 high in incombustible content to initiate or propagate a coal  
9 dust ignition need not be rock dusted during the time any of  
10 those conditions prevail.

11 (3) Coal dust and other dust in suspension in unusual  
12 quantities shall be allayed by sprinkling or other dust  
13 allaying or collecting devices.

14 (b) Specifications.--

15 (1) In a dry and dusty mine or section thereof, rock  
16 dust shall be applied and maintained upon the roof, floor and  
17 sides of all operating sections, haulageways and parallel  
18 entries connected thereto by open crosscuts. Back entries  
19 shall be rock dusted for at least 1,000 feet out by the  
20 junction with the first active working place.

21 (2) Rock dust shall be so applied to include the last  
22 open crosscut of rooms and entries and to within 40 feet of  
23 the faces. In mines where mining is done by continuous-type  
24 mining machinery, the distances from the face to which rock  
25 dust shall be applied shall be the mining distance for one  
26 shift if:

27 (i) The active working place shall be kept from damp  
28 to wet.

29 (ii) After coal production on any shifts has ceased,  
30 an application of rock dust shall be made in the exposed

1 area to within 40 feet of the face before additional  
2 mining is performed in the area.

3 (3) Rock dust shall be maintained in such quantity that  
4 the incombustible content of the mine dust shall not be less  
5 than 65%.

6 (c) Composition of rock dust.--Rock dust shall not contain  
7 more than 5% by volume of quartz or free silica particles and  
8 shall be pulverized so that 100% will pass through a 20-mesh  
9 screen and 70% or more will pass through a 200-mesh screen.

10 Section 240. Instruction of employees and examination of  
11 working areas.

12 (a) General rule.--The mine foreman or assistant mine  
13 foreman shall ascertain that all workmen are trained in the  
14 proper methods of testing roof, face and ribs. The mine foreman  
15 shall designate the tool or tools to be used for testing.  
16 Employees whose work exposes them to hazards or falls of roof  
17 and coal shall thoroughly test the roof, face and ribs before  
18 starting to work or before starting a machine, and frequently  
19 thereafter.

20 (b) Examination for date marks.--A miner shall examine his  
21 place to determine whether the mine examiner has left the date  
22 marks indicating his examination thereof. If date marks cannot  
23 be found, the miner shall notify the mine foreman or assistant  
24 mine foreman of that fact.

25 (c) Correction of unsafe roof, face or rib conditions.--

26 (1) If roof, face or rib conditions are found to be  
27 unsafe, they shall be corrected by taking down loose material  
28 or shall be securely supported before work is started.

29 (2) If roof, face or rib conditions are found to be  
30 unsafe and normal taking down or supporting practices cannot

1 correct the unsafe condition, the place shall be vacated and  
2 guarded or a danger sign erected to prevent unauthorized  
3 entrance and the certified mine official in charge promptly  
4 shall be notified. Only individuals capable of correcting the  
5 dangerous condition may be delegated to do such work.

6 (3) The certified mine official in charge shall examine  
7 for unsafe conditions and the roof, faces, ribs and timbers  
8 or supports of all working places each time they visit a  
9 place. Unsafe conditions found shall be corrected promptly.

10 All employees shall notify the mine foreman or assistant mine  
11 foreman of an unsafe condition in the mine when the condition  
12 is known to them.

13 Section 241. Roof support.

14 (a) General rule.--The roof in an underground area shall be  
15 supported as necessary for the protection of the employees and  
16 equipment. A roof control plan suitable to the roof conditions  
17 of each mine or part of a mine shall be adopted and complied  
18 with by the operator. The department shall be notified of the  
19 adoption of the plan of roof support, shall review the plan and:

20 (1) approve it;

21 (2) request additional information; or

22 (3) disapprove the plan and state in writing its reason  
23 for the disapproval.

24 (b) Roof support plans to be posted.--Workmen whose work  
25 involves roof support shall be informed of approved roof support  
26 plans and the plans shall be posted. Additional roof supports  
27 shall be used when and where necessary.

28 (c) Periodic revision and update of roof control plan.--  
29 Every mine operator shall revise and update the roof control  
30 plan every six months or more frequently if required to do so by

1 the department. A copy of the plan shall be provided to the  
2 representative of the miners ten days prior to submitting it to  
3 the department for review and comment.

4 Section 242. Authorized explosives.

5 Permissible explosives, approved breaking devices or approved  
6 blasting devices shall be used in underground mines.

7 Section 243. (Reserved).

8 Section 244. Underground storage of explosives.

9 (a) Placement.--Explosives and detonators stored underground  
10 shall be:

11 (1) Kept in section boxes or magazines of substantial  
12 construction with no metal exposed on the inside.

13 (2) Located at least 25 feet from roadways and power  
14 wires in a well-rock-dusted location protected from falls of  
15 roof.

16 (b) Separation.--If not kept in separate boxes or magazines  
17 not less than five feet apart, the explosives and detonators may  
18 be kept in the same box or magazine if separated by at least a  
19 four-inch hardwood partition or the equivalent. The boxes or  
20 magazines shall be kept at least 300 feet from the faces and out  
21 of the direct line of blasting and shall be installed outby the  
22 last permanent stopping and on intake air.

23 Section 245. Preparation of shots, blasting practices and  
24 multiple shooting.

25 (a) Requirements.--

26 (1) Only certified shot-firers shall be permitted to  
27 handle explosives and conduct blasting.

28 (2) Only electric detonators of proper strength fired  
29 with approved shot-firing units shall be used, and drillholes  
30 shall be solidly stemmed with at least 24 inches of

1 incombustible material or at least one-half of the length of  
2 the hole shall be solidly stemmed if the hole is less than  
3 four feet in depth unless other approved stemming devices or  
4 methods are used.

5 (3) Drillholes shall be of ample size and shall not be  
6 drilled beyond the limits of the cut, and, as far as  
7 practicable, cuttings and dust shall be cleaned from the  
8 holes before the charge is inserted. Charges of explosives  
9 exceeding one and one-half pounds shall be used only if  
10 drillholes are six feet or more in depth.

11 (4) Ample warning shall be given before shots are fired,  
12 and care shall be taken to determine that all persons are in  
13 the clear before firing. Individuals shall be removed from  
14 adjoining areas and other areas when there is danger of shots  
15 blowing through.

16 (5) No shots shall be fired:

17 (i) In any area until the area has been properly  
18 examined by the shot-firer.

19 (ii) In any area where gas can be detected by an  
20 approved gas detection device.

21 (6) After firing any shot, the shot-firer shall make a  
22 careful examination of the work area before leaving the area  
23 or before performing any other work in the area.

24 (b) Plan to be submitted to department.--An operator of a  
25 mine who desires to conduct multiple shooting shall submit to  
26 the department for approval a plan indicating the manner and  
27 details proposed to engage in multiple shooting.

28 (c) Prohibitions.--

29 (1) While boreholes are being charged, electrical  
30 equipment shall not be operated in the work area, and only

work in connection with roof support and general safety shall be performed. Shots shall be fired promptly after charging.

(2) Mudcaps, adobes or any other unconfined shots shall not be permitted in any bituminous coal mine.

(3) No solid shooting shall be permitted without approval from the department. Where solid shooting is practiced, blasting holes shall be stemmed the full length of the hole.

(e) Blasting and shooting cables.--

(1) Blasting cables shall be well-insulated and shall be at least 125 feet in length to permit persons authorized to fire shots to get in a safe place out of the line of blasting.

(2) Shooting cables shall be kept away from power wires and all other sources of electric current, connected to the leg wires by the person who fires the shot, staggered as to length or well-separated at the detonator leg wires and shunted at the battery end until ready to connect to the blasting unit.

(3) Detonator leg wires shall be kept shunted until ready to connect to the blasting cable.

## Section 246. Transportation of explosives.

(a) Construction of containers.--

(1) Individual containers used to carry permissible explosives or detonators shall be constructed of substantial, nonconductive materials approved by the department, kept closed and maintained in good condition. When explosives or detonators are transported underground in cars moved by means of powered haulage equipment, they shall be in cars having a substantial covering or in special substantially built

covered containers used specifically for transporting  
detonators or explosives.

(2) Explosives or detonators shall not be hauled into or  
out of the mine within five minutes preceding or following  
individuals being transported.

(b) Prohibitions.--

(1) Neither explosives nor detonators shall be  
transported on flight or shaking conveyors, mechanical  
loading machines, locomotives, scrapers, cutting machines,  
drill trucks or any self-propelled mobile equipment.

(2) No shot-firer shall carry into or have delivered to  
him any larger quantity of explosives or detonators than the  
shot-firer may reasonably expect to use in any one shift.

(c) Separation of explosives and detonators.--If explosives  
and detonators are transported in the same explosives car or in  
the same special container, they shall be separated by at least  
four inches of hardwood partition or the equivalent. The bodies  
of the cars or containers shall be constructed or lined with  
nonconductive material.

Section 247. Electrical shot-firing.

Electricity from any grounded circuit shall not be used for  
firing shots.

Section 248. General shot-firing rules.

(a) Ignited gas.--When gas is ignited by a blast or a fire  
occurs, the shot-firer shall immediately extinguish it, if  
possible, and if unable to do so shall immediately notify the  
mine foreman of the fact and warn other persons in the vicinity  
who might be endangered.

(b) Shot-firer to provide notice to others.--When a shot-  
firer is about to fire a blast, he shall notify all persons who



1 may be endangered and shall give sufficient alarm so that any  
2 person approaching may be warned of the danger.

3 (c) Construction of charging and tamping tools.--All  
4 charging and tamping tools shall be constructed of nonsparking  
5 materials.

6 (d) Disconnection from electricity.--Immediately after the  
7 firing of a shot, the firing leads shall be disconnected from  
8 the supply or source of electricity and shunted.

9 (e) Preconditions to firing machine or battery.--No firing  
10 machine or battery shall be connected to the shot-firing leads  
11 unless:

12 (1) All other steps preparatory to the firing of a shot  
13 have been completed.

14 (2) All persons have been moved to a place of safety.

15 (3) No person other than the shot-firer has made the  
16 connection.

17 (f) Firing machine or battery in possession of shot-firer.--  
18 The shot-firer shall keep the firing machine or battery in his  
19 possession at all times while blasting.

20 (g) Testing of blasting devices.--Frequent tests shall be  
21 made of all blasting devices to see that their capacity has not  
22 been decreased by use or accident.

23 (h) Examinations for gas.--The shot-firer shall examine the  
24 place for gas and other dangers before and after firing each  
25 shot or blast.

26 Section 249. Hoisting equipment and operations.

27 (a) General duties of operator or superintendent.--

28 (1) The operator or superintendent of a bituminous coal  
29 mine worked by shaft shall provide and maintain:

30 (i) A telephone or other means of communication from

1 the top to the bottom and intermediate landings of the  
2 shaft.

3 (ii) A standard means of signaling.

4 (iii) An effective safety catch, bridle chains,  
5 automatic stopping device and automatic overwind.

6 (iv) A sufficient cover on every cage used for  
7 lowering or hoisting persons.

8 (v) An effective safety gate at the top of the cage  
9 shaft and intermediate landings controlled by the cage.

10 (vi) An adequate brake on the drum of every machine  
11 used to lower or hoist persons in the shaft.

12 (2) The operator shall have the machinery used for  
13 lowering and hoisting persons into or out of the mine kept in  
14 safe condition and equipped with a reliable indicator. Cages  
15 and elevators shall be inspected once in each 24 hours by a  
16 competent person of the company or by a manufacturer's  
17 representative and a safety catch test made every two months,  
18 a record kept thereof and a copy sent to the mine inspector.

19 (3) (i) Where a hoisting engineer is required, he shall  
20 be readily available at all times when individuals are in  
21 the mine. The hoisting engineer shall operate the empty  
22 cage up and down the shaft at least one round trip at the  
23 beginning of each shift, after material has been lowered  
24 or hoisted and after the hoist has been idle for one hour  
25 or more before hoisting or lowering individuals.

26 (ii) Subparagraph (i) shall not apply to elevators  
27 used exclusively for hoisting and lowering individuals.

28 (4) There shall be cut out around the side of the  
29 hoisting shaft, or driven through the solid strata at the  
30 bottom thereof, a travelingway not less than five feet high

1 and three feet wide to enable a person to pass the shaft in  
2 going from one side to the other without passing over or  
3 under the cage or other hoisting apparatus.

4 (5) Positive stop blocks or derails shall be placed near  
5 the top and bottom, at all intermediate landings of slopes  
6 and surface inclines and at approaches to all shaft landings.

7 (6) A waiting station with sufficient room, ample  
8 clearance from moving equipment and adequate seating  
9 facilities shall be provided where individuals are required  
10 to wait for man-trips or cages. The individuals shall remain  
11 in the station until the man-trip or cage is available.

12 (7) No hoisting engineer shall be required for  
13 automatically operated cages or elevators.

14 (b) Duties of mine foreman.--

15 (1) When hoisting or lowering of individuals occurs  
16 during darkness, at any mine operated by shaft, the mine  
17 foreman shall provide and maintain, at the shaft mouth, a  
18 light of stationary character sufficient to show the landing  
19 and all surrounding objects distinctly and sufficient light  
20 of a stationary character shall be located at the bottom of  
21 the shaft so that persons going to the bottom may clearly  
22 discern the cages, elevators and other objects contiguous  
23 thereto.

24 (2) The mine foreman shall see that:

25 (i) No cages or elevators on which individuals ride  
26 are lifted or lowered at a rate of speed greater than 900  
27 feet per minute.

28 (ii) No mine cars, either empty or loaded, are  
29 hoisted or lowered on cages while individuals are being  
30 lowered or hoisted.

(iii) No cage having an unstable self-dump platform shall be used for carrying individuals unless the cage is provided with some device by which it may be securely locked when individuals are being hoisted or lowered into the mine.

(c) Ropes, links and chains.--

(1) In shafts where coal is hoisted and individuals lowered into or hoisted from the mine, the ropes, links and chains shall be of ample strength, with a factor of safety of not less than five to one of the maximum load.

(2) In shafts used exclusively for lowering or hoisting individuals and material, the factor of safety of ropes, links and chains shall not be less than ten to one of the maximum load.

(3) All ropes, links and chains shall be carefully examined at least once every 24 hours by a competent person delegated for that purpose by the superintendent.

(4) Any defect found from the examination, by which life and limb may be endangered, shall be reported at once in writing to the superintendent, who shall immediately proceed to remedy the defect. Until that is accomplished, the superintendent shall prohibit any person from being lowered into or hoisted from the mine by the defective apparatus.

(5) The person making the examination shall keep a daily record of each inspection, in ink, in a book kept at the mine office for that purpose.

(d) Cage requirements.--

(1) (i) The operator or superintendent shall provide every cage used for lowering or hoisting persons with handrails at sides or overhead or additional suitable

1 devices and with a bar or gate at ends.

2 (ii) Subparagraph (i) shall not apply to elevators  
3 used exclusively for lowering and hoisting individuals.

4 (2) The ropes shall be securely attached to the sides of  
5 the drum of every machine that is used for lowering and  
6 hoisting persons or material into and out of the mine, and  
7 the flanges shall have a clearance of not less than four  
8 inches when the whole of the rope is wound on the drum.

9 (e) Signaling system.--

10 (1) In all shafts and slopes where persons, coal and  
11 other materials are hoisted by machinery, a system of  
12 signaling approved by the department shall be in effect. The  
13 following code of signals shall be used:

14 (i) One signal to hoist the car or cage.

15 (ii) One signal to stop the car or cage when in  
16 motion.

17 (iii) Two signals to lower the car or cage.

18 (iv) Three signals to hoist persons.

19 (2) The hoist operator shall signal back when ready,  
20 after which the person shall get on the car or cage and then  
21 one signal shall be given to hoist.

22 Section 250. Bottom person.

23 (a) Duties.--At every shaft or slope where persons are  
24 lowered into or hoisted from the mine, a bottom person, who  
25 shall be over 21 years of age, shall be designated by the mine  
26 foreman. The bottom person shall:

27 (1) Be on duty when individuals are being hoisted or  
28 lowered at the beginning and end of each shift.

29 (2) Personally attend to the signals and see that the  
30 provisions of this act in respect to hoisting persons in

1 shafts or slopes are complied with.

2 (3) Not allow any tools to be placed on the same cage  
3 with persons or on either cage when they are being hoisted  
4 out of the mine, except for the purpose of repairing the  
5 shaft or machinery in the shaft. Individuals shall place  
6 their tools in containers or cars provided for that purpose,  
7 which containers or cars shall be hoisted before or after the  
8 individuals have been hoisted.

9 (4) Immediately inform the mine foreman of any  
10 violation.

11 (5) Not attempt to withdraw the car until the cage comes  
12 to a rest.

13 (6) When putting the full car on the cage, see that the  
14 springs or catches are properly adjusted so as to keep the  
15 car in its proper place, before giving the signal to the  
16 hoist operator.

17 (b) When bottom person not required.--No bottom person shall  
18 be required for automatically operated cages or elevators.

19 Section 251. Number of persons to be hoisted.

20 (a) General rule.--No greater number of persons shall be  
21 lowered or hoisted at any one time in any shaft or slope than is  
22 permitted by the department. Whenever the number of persons  
23 returning from work shall arrive at the bottom of the shaft or  
24 slope in which persons are regularly hoisted or lowered, they  
25 shall be promptly furnished with an empty cage, car or elevator  
26 and be hoisted to the surface. In cases of emergency, a lesser  
27 number than permitted shall be promptly hoisted.

28 (b) Posting of notice.--A notice of the number permitted to  
29 be lowered or hoisted at any one time shall be posted by the  
30 operator or superintendent in conspicuous places at the top and

1 bottom of the shaft, and the cage or cages or other safe means  
2 of egress shall be available at all times for the persons  
3 employed in any mine that has no second outlet available.

4 Section 252. Top person.

5 (a) Duties.--At every shaft or slope where persons are  
6 lowered into or hoisted from a mine, a top person or trip rider,  
7 who shall be over 21 years of age, shall be designated by the  
8 superintendent. The top person shall:

9 (1) Be on duty when individuals are being hoisted or  
10 lowered at the beginning and end of each shift.

11 (2) Personally attend to the signals and see that the  
12 provisions of this act in respect to lowering and hoisting  
13 persons in shafts or slopes are complied with. The trip rider  
14 may also perform this duty.

15 (3) Not allow any tools to be placed on the same cage  
16 with persons or on either cage when persons are being lowered  
17 into the mine, except for the purpose of repairing the shaft  
18 or the machinery in the shaft. Individuals shall place their  
19 tools in containers or cars provided for that purpose, which  
20 containers or cars shall be lowered before or after the  
21 individuals have been lowered.

22 (4) If located on a slope or incline plane, close the  
23 safety block or other device as soon as the cars have reached  
24 the landing in order to prevent any loose or runaway cars  
25 from descending the slope or incline plane, and in no case  
26 shall the safety block or other device be withdrawn until the  
27 cars are coupled to the rope or chain and the proper signal  
28 given.

29 (5) Carefully inspect each day all the machinery in and  
30 about the headframe and the rope used, promptly report to the

1 superintendent any defect discovered and securely attach the  
2 cars to the rope before lowering them down the incline.

3 (6) Ring the alarm bell in case of an accident and, when  
4 necessary, immediately set free the drop logs or safety  
5 switch to act.

6 (7) If located in a shaft, see that the springs or keeps  
7 for the cage rest upon and are kept in good working order.

8 (8) When taking off the full car, see that no coal or  
9 other material falls down the shaft.

10 (b) When top person not required--No top person shall be  
11 required for automatically operated cages or elevators.

12 (c) Reporting of persons crowding or pushing.--Any person  
13 crowding or pushing to get on or off a cage, elevator or car,  
14 thereby endangering life, shall be reported by any person to the  
15 superintendent, who in turn shall report the incident to the  
16 department for appropriate action.

17 Section 253. Use of competent hoist operators.

18 (a) Prohibitions.--

19 (1) No operator or superintendent of any bituminous coal  
20 mine worked by shaft, slope or incline shall place in charge  
21 of any hoist used for lowering or hoisting persons in the  
22 mine competent hoisting operators who are under 21 years of  
23 age.

24 (2) No hoist operator in charge of such machinery shall  
25 allow any person, except as may be designated for this  
26 purpose by the operator or superintendent, to interfere with  
27 any part of the machinery.

28 (3) No person shall interfere with or intimidate the  
29 hoist operator in the discharge of the duties of the hoist  
30 operators.



1           (4) No person shall ride on a loaded cage or car in any  
2       shaft, slope or incline. This paragraph shall not be  
3       construed to prevent a trip rider from riding during the  
4       performance of his authorized duties.

5       (b) Special precautions.--When individuals are being lowered  
6       or raised, the hoist operator shall take special precautions to  
7       keep the hoist well under control.

8       Section 254. Clearances and shelter holes.

9       (a) Specifications for clearances.--

10           (1) Track switches, except room and entry development  
11       switches, shall be provided with properly installed throws,  
12       bridle bars and guard rails.

13           (2) Switch throws and stands, where possible, shall be  
14       placed on the clearance side.

15           (3) Haulage roads shall have a continuous unobstructed  
16       clearance of at least 30 inches from the widest extension of  
17       regular coal transportation equipment on the clearance side.  
18       On haulage roads where trolley lines are used, the clearance  
19       shall be on the side opposite the trolley lines. The  
20       clearance space on all haulage roads shall be kept free of  
21       loose rock, coal, supplies or other materials, provided that  
22       not more than 30 inches need be kept free of such  
23       obstructions.

24           (4) Ample clearance shall be provided at all points  
25       where supplies are loaded or unloaded along haulage roads or  
26       conveyors.

27       (b) Specifications for shelter holes.--

28           (1) (i) Shelter holes shall be provided on the  
29       clearance side along designated travelways, which are  
30       also used as haulage entries, other than belt conveyor

1           haulage entries.

2           (ii) Subparagraph (i) shall not apply to face area  
3           or room haulageways.

4           (2) Shelter holes shall be spaced not more than 105 feet  
5           apart unless otherwise approved by the department. Shelter  
6           holes shall be at least five feet in depth, not more than  
7           four feet in width, level with the roadway and at least four  
8           feet in height.

9           (3) Crosscuts may be used as shelter holes even though  
10          their width exceeds four feet and they shall be kept clear  
11          for a depth of at least six feet.

12          (4) Shelter holes shall be kept clear of refuse and  
13          other obstructions.

14          (5) Shelter holes shall be provided at switch throws and  
15          at manually operated permanent doors.

16 Section 255. Underground haulage equipment.

17          (a) Maintenance.--Underground haulage equipment shall be  
18          maintained in a safe operating condition. An audible warning  
19          device and headlights shall be provided on each locomotive and  
20          each shuttle car. Rerailing devices shall be provided on all  
21          locomotives.

22          (b) Warnings to be sounded.--Operators of haulage equipment  
23          shall sound a warning on approaching curves, intersections,  
24          doors, curtains, manway crossings or any other location where  
25          persons are likely to travel.

26 Section 256. Operation of haulage equipment.

27          (a) Duties of motormen and trip riders.--Motormen and trip  
28          riders shall:

29                  (1) Use care in handling locomotives and cars.

30                  (2) See that the entire trip is coupled before starting.

1           (3) See that there is a conspicuous light or other  
2 device approved by the department, properly maintained, on  
3 the front and rear of each trip or train of cars when in  
4 motion.

5       (b) Prohibitions.--

6           (1) No person shall ride on locomotives unless granted  
7 permission by the mine foreman.

8           (2) No person shall ride on any loaded car or on the  
9 outside of any car.

10          (3) No motorman or trip rider shall get on or off a  
11 locomotive while it is in motion.

12          (4) No person shall fly or run switches or ride on the  
13 front bumper of a car. Back poling shall be permitted only to  
14 the nearest turning point or when going up extremely steep  
15 grades and then only cautiously and at slow speed. The  
16 operator of a shuttle car shall face in the direction of  
17 travel except during the loading operation when he may face  
18 the loading machine.

19       (c) Duties of motormen.--Motormen shall:

20           (1) See that properly maintained safety devices are  
21 placed on the last car of any trip being hauled upgrade, as  
22 designated by the mine foreman and approved by the  
23 department, on the front and rear of each trip or train of  
24 cars when in motion.

25           (2) Inspect locomotives and report any mechanical  
26 defects found to the proper mine official prior to operation.  
27 The locomotive may not be operated until the defects are  
28 corrected.

29           (3) If there is reason to leave a trip, see that the  
30 trip is left in a safe place, secure from cars, locomotives

1 or other dangers and where it will not endanger the operators  
2 of other trips or other persons.

3 (d) System of signals, methods or devices.--A system of  
4 signals, methods or devices shall be used to provide protection  
5 for trips, locomotives and other equipment coming out onto  
6 tracks used by other equipment. Where a dispatcher is employed  
7 to control trips, traffic shall move only at his direction.

8 Section 257. Trip rider and hooker-on on rope haulage.

9 (a) Duties of trip rider.--The trip rider shall see that all  
10 hitchings are safe for use and that the trip is coupled before  
11 starting. If at any time the trip rider sees any material defect  
12 in the rope, link or chain, he shall immediately remedy the  
13 defect or, if he is unable to do so, shall detain the trip and  
14 report the matter to the mine foreman or the assistant.

15 (b) Duties of hooker-on.--The hooker-on at the bottom of any  
16 slope shall see that cars are properly coupled to a rope or  
17 chain and that the safety catch or other device is properly  
18 attached to the rear car before giving the signal to the  
19 hoisting operator. The hooker-on shall not allow any person to  
20 ride up the slope other than the trip rider.

21 Section 258. Transportation of individuals.

22 (a) General rule.--The speed of mantrips shall be governed  
23 by the mine foreman, and mantrips shall be operated at safe  
24 speeds consistent with the condition of roads and type of  
25 equipment used. Each mantrip shall be under the charge of a  
26 competent person designated by the mine foreman or the assistant  
27 mine foreman and operated independently of any loaded trip of  
28 coal or other heavy material, but may transport tools, small  
29 machine parts and supplies.

30 (b) Prohibition.--No person shall:

1           (1) Ride under the trolley wire unless suitable covered  
2 mantrips are used.

3           (2) Load or unload before the cars in which they are to  
4 ride or are riding come to a full stop. Individuals shall  
5 proceed in an orderly manner to and from mantrips.

6           (c) Adequate clearance and proper illumination.--Adequate  
7 clearance and proper illumination shall be provided where  
8 individuals load or unload mantrips.

9           (d) Adequate precautions.--Adequate precautions shall be  
10 taken so that moving trips and standing cars are subject to  
11 proper control by derailing or braking devices.

12 Section 259. Conveyor belts and conveyor equipment.

13           (a) Specifications.--

14           (1) Except as otherwise provided under paragraph (2),  
15 all conveyor entries shall be provided with a minimum width  
16 and height of not less than four feet for travel and, in  
17 conveyor entries in which track is installed, the minimum  
18 amount of clearance width shall not be less than two and one-  
19 half feet, which clearance width shall be continuous  
20 throughout the entry.

21           (2) In lieu of maintaining four feet of height in  
22 conveyor entries, a minimum height of three feet and a  
23 minimum width of four feet may be maintained, provided the  
24 operator furnishes a mode of conveyance for men and material  
25 other than on the conveyor. All such travel space and  
26 clearance space shall be kept free of all forms of  
27 obstruction underfoot and from electric wires and electric  
28 cables. A space of not less than four feet in width shall be  
29 provided for travel from the immediate entrance of each  
30 working place to the face thereof, which space shall be kept

1 free of all forms of obstruction underfoot and free from  
2 electric wires and electric cables.

3 (b) Cross points.--At all points where individuals must of  
4 necessity cross conveyors, the conveyor at the point where the  
5 crossing is made shall be so arranged that individuals can cross  
6 safely and conveniently without coming into contact with the  
7 conveyor.

8 (c) Automatic stop control.--Conveyors shall be equipped  
9 with an automatic control that will stop the driving motor in  
10 case of slipping on the drive pulley, and the control shall be  
11 tested each operating shift to ascertain that it is in good  
12 operating condition.

13 (d) Electric wires and cables.--All electric wires or  
14 electric cables in completed portions of conveyor entries shall  
15 be carried on insulators.

16 (e) Control lines.--Control lines shall be installed the  
17 full length of the belt.

18 (g) Point type heat sensors.--Point type heat sensors shall  
19 not be used as the primary type of fire sensors in any mine  
20 opened more than six months after the effective date of this  
21 section.

22 Section 260. Blowtorches and fuel.

23 No blowtorch may be used in a mine.

24 Section 261. Oxygen and gas containers.

25 (a) General rule.--A substantial insulated container  
26 provided with a cover and specially designed for safe  
27 transportation of the cylinders shall be used in transporting  
28 oxygen and gas tanks or cylinders in all bituminous coal mines.

29 (b) Identification.--All oxygen and gas tanks or cylinders  
30 shall be clearly identified.

1 Section 262. Transportation of oxygen and gas.

2 (a) General rule.--Transportation of oxygen and gas tanks or  
3 cylinders shall be permitted on self-propelled machinery or belt  
4 conveyors specially equipped for safe holding of the containers  
5 in transportation. In no instance shall such transportation be  
6 permitted in conjunction with any mantrip.

7 (b) Marking of empty tanks and cylinders.--Empty oxygen and  
8 gas tanks or cylinders shall be marked "empty" and shall be  
9 removed from the mine promptly in proper containers. The valve  
10 protection caps shall be placed on all tanks or cylinders for  
11 which caps are provided when not in use and when being  
12 transported. No oxygen and gas tanks or cylinders shall be  
13 transported with the hoses and gauges attached.

14 (c) Identification of tanks and cylinders.--All oxygen and  
15 gas tanks or cylinders shall be clearly identified.

16 Section 263. Storage of oxygen and gas.

17 (a) General rule.--All oxygen and gas tanks or cylinders  
18 shall be properly secured and protected against possible damage  
19 when stored in and about bituminous coal mines. When oxygen and  
20 gas tanks or cylinders are stored in underground shops or  
21 surface structures, they shall be protected from damage by  
22 falling material and secured in an upright position. Not more  
23 than a one-week supply of oxygen or gas shall be stored in any  
24 underground or surface shop. This quantity shall be determined  
25 in agreement with the department.

26 (b) Valves and hoses.--The valves on oxygen and gas tanks or  
27 cylinders shall be closed. The hoses shall be removed when not  
28 in actual use, except in a properly ventilated and protected  
29 underground machine shop or surface structure. Valves on empty  
30 tanks or cylinders shall be kept closed.

1 Section 264. Use of oxygen and gas.

2 (a) General rule.--Oxygen and gas tanks or cylinders and  
3 their contents must be used solely for their intended purposes.

4 (b) Training and clothing.--A person assigned to use and  
5 work with oxygen or gas shall be properly trained and skilled in  
6 its use and shall be fully conversant with the danger of its  
7 misuse. Any person using oxygen or gas in and about a bituminous  
8 coal mine shall be provided with goggles or shields, and the  
9 clothing of such person shall be reasonably free of oil and  
10 grease.

11 (c) Lighting of torches.--Only a safe type of spark-lighter  
12 shall be used for lighting torches. The use of matches,  
13 cigarette lighters, electric arcs or hot metal to light or  
14 relight a torch is prohibited.

15 (d) Maintenance.--The oxygen or gas hose lines, gauges and  
16 similar equipment shall be maintained in safe operating  
17 condition. Defective tanks, cylinders, gauges, hose lines,  
18 torches and similar equipment shall be taken out of service upon  
19 discovery and shall not be put into use until corrected and made  
20 safe.

21 (e) Multiple units permitted.--

22 (1) Multiple units consisting of one gas tank and one  
23 oxygen tank are permitted in a working section when  
24 necessary. When not in use, the tanks shall be removed to a  
25 point outby the last open crosscut and kept away from power  
26 wires and electric equipment. A proper storage area must be  
27 provided.

28 (2) This subsection does not apply to oxygen tanks used  
29 to provide breathable air in the event of an emergency.

30 (f) Pressure.--Neither oxygen nor gas shall be used under



1 direct pressure from tanks or cylinders but must be used under  
2 reduced pressure not exceeding pressures recommended by the  
3 manufacturer of the oxygen or gas.

4 (g) Working sections.--Oxygen or gas cutting, burning or  
5 welding shall be done in fresh intake air only in working  
6 sections. The area where the work is to be done shall be  
7 examined by a mine official before, during and after the welding  
8 or burning to assure that no fire or other danger exists. In the  
9 event the equipment to be repaired cannot be removed from the  
10 face area to outby the last open crosscut, the following shall  
11 be satisfied:

12 (1) Fresh intake air shall be established to a point  
13 inby where the cutting or welding is to be performed.

14 (2) An approved gas detection device shall be used by a  
15 mine official for gas detection during the cutting and  
16 welding operation.

17 (3) No person shall be permitted inby the point in the  
18 working section where cutting or welding operations are being  
19 performed.

20 (h) Safety requirements.--

21 (1) When oxygen or gas cutting, burning or welding is  
22 being done, a suitable fire extinguisher shall be kept on  
23 hand and ready for use. In dry or dusty locations, a water  
24 line and tap under pressure or an adequate supply of rock  
25 dust shall be available in the area where such work is  
26 performed.

27 (2) Neither oxygen nor gas shall be used near oil,  
28 grease or fine coal dust unless the oil, grease or fine coal  
29 dust is adequately cleaned or made inert by the use of rock  
30 dust or the area where the work is to be done is thoroughly

1       wetted.

2       (i) Intake air activity.--Oxygen or gas cutting, burning or  
3 welding shall be done in intake air only. Underground shops  
4 where oxygen gas burning occurs shall be on a separate split of  
5 air.

6       (j) Tests for leaks.--Tests for leaks on hose valves or  
7 gauges shall be made only with a soft brush and soapy water or  
8 soapsuds.

9       (k) Torch-tip cleaners.--An efficient and proper type torch-  
10 tip cleaner shall be kept on hand and used to maintain each  
11 torch in safe operating condition. A suitable wrench designed  
12 for oxygen and gas tanks shall be in the possession of the  
13 person authorized to use the equipment.

14       (l) Manifolding cylinders.--The practice known as  
15 "manifolding cylinders" shall be permitted if the installation  
16 is solidly grounded and operation thereof is in accordance with  
17 recognized safe procedures.

18       (m) Protection from power lines.--Oxygen and gas tanks or  
19 cylinders shall be protected from power lines or energized  
20 electrical machinery or equipment, and such tanks or cylinders  
21 shall be kept away from the place where the cutting is being  
22 done in order to prevent damage or accident and to prevent heat  
23 from affecting such tanks or cylinders.

24 Section 265. Duties of persons subject to this act.

25       It shall be the duty of each operator, superintendent, mine  
26 foreman, assistant mine foreman and mine examiners and other  
27 officials to comply with and to see that others comply with the  
28 provisions of this act. It shall be the duty of all employees to  
29 comply with this act and to cooperate with management and the  
30 department in carrying out its provisions. Reasonable rules and

1 regulations of an operator for the protection of employees and  
2 preservation of property that are in harmony with the provisions  
3 of this act and other applicable laws shall be complied with.

4 Section 266. Protective clothing.

5 (a) Goggles.--Welders and helpers shall use proper shields  
6 or goggles to protect their eyes. All employees shall have  
7 approved goggles or eye shields and use them where there is a  
8 hazard from flying particles or other eye hazards.

9 (b) Snug-fitting clothing.--Employees engaged in haulage  
10 operations and all other persons employed around moving  
11 equipment on the surface and underground shall wear snug-fitting  
12 clothing.

13 (c) Gloves.--Protective gloves shall be worn when material  
14 which may injure hands is handled, but gloves with gauntlet  
15 cuffs shall not be worn around moving equipment.

16 (d) Protective hats.--All persons shall wear protective hats  
17 while underground and while on the surface where falling objects  
18 may cause injury.

19 (e) Protective footwear.--Protective footwear shall be worn  
20 by employees, officials and others while on duty in and around a  
21 bituminous coal mine.

22 Section 267. Checking systems.

23 Each bituminous coal mine shall have a check-in and check-out  
24 system that will provide positive identification upon the person  
25 of every individual underground. An accurate record of the  
26 individuals in the mine, which shall consist of a written  
27 record, a check board, a time clock record or another approved  
28 method shall be kept on the surface in a place that will not be  
29 affected in the event of an emergency. The record shall bear a  
30 number or name identical to the identification check carried by

1 or fastened to the belt of all persons going underground.

2 Section 268. Prohibitions regarding endangering security of  
3 mine.

4 (a) Prohibitions regarding ventilation.--No miner, worker or  
5 other person shall knowingly damage, obstruct or remove any  
6 shaft, lamp, instrument, air course or other equipment, obstruct  
7 or disrupt any portion of the mine's ventilation, carry open  
8 lights, open a door closed for directing ventilation and not  
9 close it again or enter any part of a mine that has been  
10 endangered off. No person shall deface, pull down or destroy any  
11 notice boards, record books or mine maps.

12 (b) Smoking prohibition.--Open lights, smoking and smokers'  
13 articles, including matches, are prohibited in bituminous coal  
14 mines. No person shall at any time enter a mine with or carry  
15 into the mine any matches, pipes, cigars, cigarettes or any  
16 device for making lights or fire not approved. In all mines the  
17 operator may search or cause to be searched any person,  
18 including his clothing and material belongings, entering or  
19 about to enter the mine, or inside the mine, to prevent such  
20 person from taking or carrying into the mine any of the articles  
21 prohibited by this subsection.

22 (c) Intoxicated persons.--No person under the influence of  
23 alcohol or a controlled substance shall enter into or loiter  
24 about any mine. No person shall have in his possession alcohol  
25 or controlled substances while in or about the mine premises.  
26 This provision shall not apply to the use of medication as  
27 prescribed for that person.

28 Section 269. Responsibility for care and maintenance of  
29 equipment.

30 Equipment operators shall exercise reasonable care in the

1 operation of the equipment entrusted to them and shall promptly  
2 report defects known to them.

3 Section 270. Control of dust and other inhalation hazards.

4 Individuals exposed for short periods to gas, dust, fume and  
5 mist inhalation hazards shall wear approved respiratory  
6 equipment. When exposure is for prolonged periods, dust shall be  
7 controlled by the use of approved dust collectors or by water or  
8 other approved methods.

9 Section 271. Safeguards for mechanical equipment.

10 (a) Locking.--The cutting devices of mining machines shall  
11 be locked securely by mechanical means or electrical interlocks  
12 while the machines are parked or being trammed. Loading machines  
13 shall not be trammed with loading arms in motion except when  
14 loading materials.

15 (b) Guarding.--Belt chain or rope drives and the moving  
16 parts of machinery which are within seven feet of the floor,  
17 ground or platform level, unless isolated, shall be guarded  
18 adequately. Repair pits shall be kept covered or guarded at all  
19 times when not in use. Machinery shall not be lubricated or  
20 repaired while in motion, except where safe remote lubricating  
21 devices are used. Machinery shall not be started until the  
22 person lubricating or repairing it has given a clear signal.  
23 Guards that have been removed shall be replaced before the  
24 machinery is again put into use. Provision shall be made to  
25 prevent accumulation of spilled lubricants.

26 (c) Grinders.--Mechanically operated grinding wheels shall  
27 be equipped with safety washers and substantial retaining hoods  
28 covering two-thirds of the circumference of the wheel, and  
29 goggles or eye shields shall be used. Where stationary grinders  
30 are used, a tool rest shall be provided and the clearance

1 between the wheel and tool rest shall not exceed one thirty-  
2 second of an inch.

3 Section 272. First aid equipment.

4 In every bituminous coal mine where individuals are employed  
5 underground and in every active section of the mine, it shall be  
6 the duty of the operator or superintendent of the mine to keep  
7 on hand properly constructed stretchers, woolen and waterproof  
8 blankets and all requisites for use in case of emergency. No  
9 first aid material shall be removed or diverted without  
10 authorization, except in case of accident in or about the mine.  
11 It shall be the duty of the operator or superintendent to have  
12 adequate ambulance service available promptly in the event of  
13 injury to any employee.

14 Section 273. Fire protection.

15 (a) Firefighting equipment.--Each mine shall be provided  
16 with suitable firefighting equipment adapted for the size and  
17 conditions of the mine.

18 (b) Standards for firefighting equipment.--At a minimum,  
19 firefighting equipment shall meet the following:

20 (1) Waterlines shall be capable of delivering 50 gallons  
21 of water per minute at a nozzle pressure of 50 pounds per  
22 square inch.

23 (2) A portable water car shall be of at least 1,000  
24 gallons capacity and shall have at least 300 feet of fire  
25 hose with nozzles. A portable water car shall be capable of  
26 providing a flow through the hose of 50 gallons of water per  
27 minute at a nozzle pressure of 50 pounds per square inch.

28 (3) A portable chemical car shall carry enough chemicals  
29 to provide a fire extinguishing capacity equivalent to that  
30 of a portable water car.

1           (4) A portable foam-generating machine or device shall  
2 have facilities and equipment for supplying the machine with  
3 30 gallons of water per minute at 30 pounds per square inch  
4 for a period of 35 minutes.

5           (5) A portable fire extinguisher shall be either:

6               (i) A multipurpose dry chemical type containing a  
7 nominal weight of five pounds of dry powder and enough  
8 expellant to apply the powder.

9               (ii) A foam-producing type containing at least 2.5  
10 gallons of foam-producing liquids and enough expellant to  
11 supply the foam.

12          (6) Only fire extinguishers approved by the Underwriters  
13 Laboratories, Inc., or Factory Mutual Research Corp.,  
14 carrying appropriate labels as to the type and purpose shall  
15 be used. All portable fire extinguishers shall have a 2A 10  
16 BC or higher rating.

17          (7) The fire hose shall be lined with a flame-resistant  
18 material. The cover shall be polyester or other material with  
19 flame-spread qualities and mildew resistance equal or  
20 superior to polyester. The bursting pressure shall be at  
21 least four times the water pressure at the valve to the hose  
22 inlet with the valve closed, and the maximum water pressure  
23 in the hose nozzle shall not exceed 100 pounds per square  
24 inch.

25          (c) Working sections.--

26               (1) Each working section of a mine producing 300 tons or  
27 more per shift shall be provided with two portable fire  
28 extinguishers and 240 pounds of rock dust in bags or other  
29 suitable containers. Water lines shall extend to each section  
30 loading point and be equipped with enough fire hose to reach

1 each working face unless the section loading point is  
2 provided with one of the following:

3 (i) two portable water cars;

4 (ii) two portable chemical cars; or

5 (iii) one portable water car or one portable  
6 chemical car, and either:

7 (A) a portable foam-generating machine; or

8 (B) a portable high-pressure rock-dusting  
9 machine fitted with at least 250 feet of hose and  
10 supplied with at least 60 bags of rock dust.

11 (2) Each working section of a mine producing less than  
12 300 tons of coal per shift shall be provided with:

13 (i) Two portable fire extinguishers.

14 (ii) Two hundred and forty pounds of rock dust in  
15 bags or other suitable containers.

16 (iii) At least 500 gallons of water and at least  
17 three pails of ten-quart capacity. In lieu of the 500-  
18 gallon water supply, a water line with sufficient hose to  
19 reach the working places, a portable water car with a  
20 500-gallon capacity or a portable all-purpose dry powder  
21 chemical car of at least 125 pounds capacity may be  
22 provided.

23 (d) Belt conveyors.--In all mines, water lines shall be  
24 installed parallel to the entire length of belt conveyors and  
25 shall be equipped with fire hose outlets with valves at 300-foot  
26 intervals along each belt conveyor and at tailpieces. At least  
27 500 feet of fire hose with fittings suitable for connection with  
28 each belt conveyor water line system shall be stored at  
29 strategic locations along the belt conveyor. Water lines may be  
30 installed in entries adjacent to the conveyor entry belt as long



1 as the outlets project into the belt conveyor entry.

2 (e) Haulage tracks.--

3 (1) In a mine producing 300 tons of coal or more per  
4 shift, water lines shall be installed parallel to all haulage  
5 tracks using mechanized equipment in the track or adjacent  
6 entry and shall extend to the loading point of each working  
7 section. Water lines shall be equipped with outlet valves at  
8 intervals of not more than 500 feet, and 500 feet of fire  
9 hose with fittings suitable for connection with such water  
10 lines shall be provided at strategic locations. Two portable  
11 water cars, readily available, may be used in lieu of water  
12 lines prescribed under this paragraph.

13 (2) In a mine producing less than 300 tons of coal per  
14 shift, there shall be provided at 500-foot intervals in all  
15 main and secondary haulage roads:

16 (i) a tank of water of at least 55-gallon capacity  
17 with at least three pails of not less than ten-quart  
18 capacity; or

19 (ii) not less than 240 pounds of bagged rock dust.

20 (f) Transportation.--Each track or off-track locomotive,  
21 self-propelled mantrip car or personnel carrier shall be  
22 equipped with one portable fire extinguisher.

23 (g) Electrical installations.--

24 (1) Two portable fire extinguishers or one extinguisher  
25 having at least twice the minimum capacity specified for a  
26 portable fire extinguisher specified in subsection (b)(5)  
27 shall be provided at each permanent electrical installation.

28 (2) One portable fire extinguisher and 240 pounds of  
29 rock dust shall be provided at each temporary electrical  
30 installation.

1       (h) Oil storage stations.--Two portable fire extinguishers  
2 and 240 pounds of rock dust shall be provided at each permanent  
3 underground oil storage station. One portable fire extinguisher  
4 shall be provided at each working section where 25 gallons or  
5 more of oil is stored in addition to extinguishers required  
6 under subsection (c).

7       (i) Welding, cutting and soldering.--One portable fire  
8 extinguisher or 240 pounds of rock dust shall be provided at  
9 locations where welding, cutting or soldering with arc or flame  
10 is being done.

11       (j) Power lines.--At each wooden door through which power  
12 lines pass, there shall be one portable fire extinguisher or 240  
13 pounds of rock dust within 25 feet of the door on the intake air  
14 side.

15       (k) Emergency materials.--

16           (1) At a mine producing 300 tons of coal or more per  
17 shift, there shall be readily available the following  
18 materials at locations not exceeding two miles from each  
19 working section:

20               (i) One thousand board feet of brattice boards.

21               (ii) Two rolls of brattice cloth.

22               (iii) Two handsaws.

23               (iv) Twenty-five pounds of 8d nails.

24               (v) Twenty-five pounds of 10d nails.

25               (vi) Twenty-five pounds of 16d nails.

26               (vii) Three claw hammers.

27               (viii) Twenty-five bags of wood fiber plaster or ten  
28 bags of cement, or equivalent material for stoppings.

29               (ix) Five tons of rock dust.

30           (2) At a mine producing less than 300 tons of coal per

1 shift, the materials set forth in this subsection shall be  
2 available at the mine, provided, however, that the emergency  
3 materials for one or more mines may be stored at a central  
4 warehouse or building supply company and the supply must be  
5 the equivalent of that required for all mines involved and  
6 within an hour's delivery time from each mine. This exception  
7 shall not apply where the active working sections are more  
8 than two miles from the surface.

9 (l) Condition and examination of firefighting equipment.--

10 All firefighting equipment shall be maintained in a usable and  
11 operative condition. Chemical extinguishers shall be examined  
12 every six months, and the date of the examination shall be  
13 written on a permanent tag attached to the extinguisher.

14 (m) Branch lines.--As a part of the deluge-type water spray  
15 system, two or more branch lines of nozzles shall be installed.  
16 The maximum distance between nozzles shall not exceed eight  
17 feet.

18 (n) Installation of foam generator systems.--

19 (1) Foam generator systems shall be located so as to  
20 discharge foam to the belt drive, belt take-up, electrical  
21 controls, gear-reducing unit and conveyor belt.

22 (2) Foam generator systems shall be equipped with a fire  
23 sensor which actuates the system, and each system shall be  
24 capable of producing and delivering the following amounts of  
25 foam within five minutes:

26 (i) At fire-resistant belt installations, an amount  
27 which will fully envelop the belt drive, belt take-up,  
28 electrical controls, gear-reducing unit and conveyor belt  
29 over a distance of 50 feet.

30 (ii) At non-fire-resistant belt installations, an

1 amount which will fully envelop the belt drive, belt  
2 take-up electrical controls, gear-reducing unit and  
3 conveyor belt over a distance of 150 feet.

4 (3) The foam generator shall be equipped with a warning  
5 device designed to stop the belt drive when a fire occurs,  
6 and all such warning devices shall be capable of giving both  
7 an audible and visual signal when actuated by fire.

8 (4) Water, power and chemicals required shall be  
9 adequate to maintain water or foam flow for no less than 25  
10 minutes.

11 (5) Water systems shall include strainers with a flush-  
12 out connection and a manual shut-off valve.

13 (o) Water sprinkler systems.--Water sprinkler systems may be  
14 installed to protect main and secondary belt-conveyor drives,  
15 however, where such systems are employed, they shall be  
16 installed and maintained in accordance with subsections (p),  
17 (q), (r), (s) and (t).

18 (p) Installation of water sprinkler systems.--

19 (1) The fire-control components of each water sprinkler  
20 system shall be installed, as far as practicable, in  
21 accordance with the recommendations set forth in the National  
22 Fire Protection Association, Code No. 13, entitled  
23 "Installation of Sprinkler Systems," in effect at the time of  
24 installation, and such systems' components shall be of a type  
25 approved by the Underwriters Laboratories, Inc., Factory  
26 Mutual Research Corporation.

27 (2) Each sprinkler system shall provide protection for  
28 the motor drive belt take-up, electrical controls, gear-  
29 reducing unit and 50 feet of fire-resistant belt or 150 feet  
30 of non-fire-resistant belt adjacent to the belt drive.

1           (3) The components of each water sprinkler system shall  
2 be located so as to minimize the possibility of damage by  
3 roof fall or by the moving belt and its load.

4       (q) Arrangement of sprinklers.--

5           (1) At least one sprinkler shall be installed above each  
6 belt drive, belt take-up, electrical control and gear-  
7 reducing unit, and individual sprinklers shall be installed  
8 at intervals of no more than eight feet along all conveyor  
9 branch lines.

10          (2) Two or more branch lines, at least one of which  
11 shall be above the top belt and one between the top and  
12 bottom belt, shall be installed in each sprinkler system to  
13 provide a uniform discharge of water to the belt surface.

14          (3) The water discharge rate from the sprinkler system  
15 shall not be less than .25 gallon per minute per square foot  
16 of the top surface of the top belt, and the discharge shall  
17 be directed at both the upper and bottom surfaces of the top  
18 belt and to the upper surface of the bottom belt. The supply  
19 of water shall be adequate to provide a constant flow of  
20 water for ten minutes with all sprinklers functioning.

21          (4) Each individual sprinkler shall be activated at a  
22 temperature of not less than 150 degrees Fahrenheit and not  
23 more than 300 degrees Fahrenheit.

24          (5) Water systems shall include strainers with a flush-  
25 out connection and a manual shutoff valve.

26       (r) Backup water system.--One fire hose outlet together with  
27 a length of hose capable of extending to the belt drive shall be  
28 provided within 300 feet of each belt drive.

29       (s) Fire warning devices at belt drives.--Each water  
30 sprinkler system shall be equipped with a device designed to

1 stop the belt drive in the event of a rise in temperature, and  
2 each warning device shall be capable of giving both an audible  
3 and visual warning when a fire occurs.

4 (t) Examination and test.--Each water sprinkler system shall  
5 be examined weekly, and a functional test of the complete system  
6 shall be conducted at least once each year.

7 (u) Equivalent dry-pipe system.--Where water sprinkler  
8 systems are installed to protect main and secondary belt  
9 conveyor drives and freezing temperatures prevail, an equivalent  
10 dry-pipe system may be installed.

11 (v) Dry-powder chemical systems.--Self-contained dry-powder  
12 chemical systems may be installed to protect main and secondary  
13 belt conveyor drives; however, where self-contained dry-powder  
14 chemical systems are employed, they shall be installed and  
15 maintained in accordance with the provisions of subsections (w),  
16 (x), (y), (z), (aa), (bb), (cc) and (dd).

17 (w) Installation of dry-powder chemical systems.--

18 (1) Self-contained dry-powder chemical systems shall be  
19 installed to protect each beltdrive, belt take-up, electrical  
20 controls, gear-reducing units and 50 feet of fire-resistant  
21 belt or 150 feet of non-fire-resistant belt adjacent to the  
22 belt drive.

23 (2) The fire control components of each dry-powder  
24 chemical system shall be a type approved by the Underwriters  
25 Laboratories, Inc., or Factory Mutual Engineering  
26 Corporation.

27 (3) The components of each dry-powder chemical system  
28 shall be located so as to minimize the possibility of damage  
29 by roof fall or by the moving belt and its load.

30 (x) Construction of dry-powder chemical systems.--

1           (1) Each self-contained dry-powder system shall be  
2 equipped with hose or pipe lines which are no longer than  
3 necessary.

4           (2) Metal piping and hose between control valves and  
5 nozzles shall have a minimum bursting pressure of 500 pounds  
6 per square inch.

7           (3) Hose shall be protected by wire braid or its  
8 equivalent.

9           (4) Nozzles and reservoirs shall be sufficient in number  
10 to provide maximum protection to each belt, belt take-up,  
11 electrical controls and gear-reducing unit.

12           (5) Each belt shall be protected on the top surface of  
13 both the top and bottom belts and the bottom surface of the  
14 top belt.

15       (y) Sensing and fire-suppression devices.--

16           (1) Each self-contained dry-powder chemical system shall  
17 be equipped with sensing devices which shall be designed to  
18 activate the fire control system, sound an alarm and stop the  
19 conveyor drive motor in the event of a rise in temperature,  
20 and provision shall be made to minimize contamination of the  
21 lens of any optical sensing device installed in the system.

22           (2) Where sensors are operated from the same power  
23 source as the belt drive, each sensor shall be equipped with  
24 a standby power source which shall be capable of remaining  
25 operative for at least four hours after a power cutoff.

26           (3) Sensor systems shall include a warning indicator or  
27 test circuit which shows it is operative.

28           (4) Each fire suppression system shall be equipped with  
29 a manually operated control valve which shall be independent  
30 of the sensor.

(z) Dry powder requirements.--Each dry powder chemical system shall contain the following minimum amounts of multipurpose dry powder:

(1) One hundred and twenty-five pounds of dry powder for fire resistant belts.

(2) Two hundred and twenty-five pounds of dry powder for non-fire-resistant belts.

(aa) Nozzles, flow rate and direction.--The nozzles of each dry-powder chemical system shall be capable of discharging all powder within one minute after actuation of the system, and such nozzles shall be directed so as to minimize the effect of ventilation upon fire control.

(bb) Safeguards for dry-powder chemical systems.--Adequate guards shall be provided along all belt conveyors in the vicinity of each dry-powder chemical system to protect persons whose vision is restricted by a discharge of powder from the system. Handrails shall be installed in these areas to provide assistance to those passing along the conveyor after a powder discharge.

(cc) Backup water system.--One fire hose outlet, together with a length of hose capable of extending to the belt drive, shall be provided within 300 feet of each belt drive.

(dd) Inspection of dry-powder chemical systems.--

(1) Each dry-powder chemical system shall be examined weekly, and a functional test of the complete system shall be conducted at least once each year.

(2) Where the dry-powder chemical system has been actuated, all components of the system shall be cleaned immediately by flushing all powder from pipes and hoses, and all hose damaged by fire shall be replaced.



1 Section 274. Mine openings or outlets.

2 (a) Mine openings or outlets.--It shall be unlawful for the  
3 operator, superintendent or mine foreman of a mine to employ any  
4 person to work in the mine unless there are two openings or  
5 outlets to the surface from every seam of coal being worked, and  
6 available from every seam of coal entry, which openings or  
7 outlets shall have distinct means of ingress and egress  
8 available at all times for the use by the employees. The two  
9 openings to the surface required by this section shall not be at  
10 a common shaft, slope, or drift opening, except that multiple  
11 compartment shafts or slopes separated by substantially  
12 constructed walls of noncombustible material shall be considered  
13 as two separate and distinct openings. The distance between two  
14 shafts shall not be less than 200 feet, the distance between the  
15 openings to the surface of slopes shall not be less than 150  
16 feet and the distance between drifts shall not be less than 50  
17 feet, provided that the distance between the openings shall  
18 apply only to mines opened after the effective date of this act.  
19 The distances specified may be less with the written consent of  
20 the department. The passageways between the two shafts shall at  
21 all times be maintained in safe and available condition for the  
22 employees to travel, and the pillars in entries between the  
23 shafts shall not be removed without the approval of the  
24 department.

25 (b) Openings.--The requirements of subsection (a) shall not  
26 apply to the openings of a new mine, or to the openings of a new  
27 entry of an existing mine, that is being worked for the purpose  
28 of making connection between the two outlets, as long as not  
29 more than 20 persons are employed at any one time in making the  
30 connection or driving the second opening. The requirements of

1 subsection (a) shall apply to any mine in which the second  
2 opening has been rendered unavailable by reason of the final  
3 robbing or removing of pillars, as long as not more than 20  
4 persons are employed in the mine at any one time.

5 (c) Safe egress.--Safe means of egress shall be available at  
6 all times for the persons employed in a mine that has no second  
7 outlet available.

8 (d) Entries.--Every mine shall have at least five main  
9 entries, two of which shall lead from the main opening and two  
10 of which shall lead from the second opening into the body of the  
11 mine. The fifth, which may be connected with an opening to the  
12 surface or with the intake airway at or near the main intake  
13 opening, shall be used exclusively as a travelingway for the  
14 employees.

15 (e) Intake and return entries.--The intake and return  
16 entries shall be kept reasonably drained and reasonably free  
17 from refuse and obstructions of all kinds, so that persons may  
18 safely travel throughout their whole length and have a safe  
19 means of egress from workings in case of emergency. The entries  
20 shall be separated by pillars of coal of sufficient strength.  
21 When the coal seam height is less than four and one-half feet,  
22 employees shall be provided a means of transportation in and out  
23 of the mine.

24 (f) Passageway between workings.--In every slope with  
25 workings on both sides, an overpass or underpass not less than  
26 five feet wide and five feet high shall be provided as a  
27 passageway for the use of employees to cross from one side of  
28 the slope to the other. The overpass or underpass shall connect  
29 with available passageways leading to the workings on both sides  
30 of the slope. The intervening strata between the slope and the

1 overpass or underpass shall be of sufficient strength at all  
2 points to insure safety to the employees, provided, however,  
3 that if it is impracticable to drive an overpass or an underpass  
4 in the solid, an overpass or underpass, if substantially built  
5 with masonry or other incombustible material, will be deemed  
6 sufficient.

7 (g) Shafts less than 100 feet deep.--If the opening or  
8 outlet other than the main opening is a shaft not more than 100  
9 feet in depth and is used by employees for the purpose of  
10 ingress to or egress from the mine, it shall be kept available  
11 and in safe condition, certified free from dangerous gases and  
12 all obstruction, and shall be fitted with safe and convenient  
13 stairways, with steps of an average tread of ten inches and a  
14 rise of nine inches, not less than two feet in width and not to  
15 exceed an angle of 45 degrees, and with landings not less than  
16 24 inches in width and four feet in length, at easy and  
17 convenient distances. Stairways shall be made safe by having  
18 handrails of suitable material placed on one side, or on both  
19 sides when requested by the department, and shall be inspected  
20 every 24 hours by a certified mine official employed for that  
21 purpose. Water that may come from the surface or from the strata  
22 in the shaft shall be conducted away so it will not fall on the  
23 stairways or on persons while descending or ascending them.

24 (h) Shafts more than 100 feet deep.--When a mine is operated  
25 by a shaft more than 100 feet in depth, the persons employed in  
26 the shaft shall be lowered and hoisted by means of machinery  
27 unless the second opening is a drift or a slope. When the  
28 employees are lowered into or hoisted from the mine at the main  
29 shaft opening, the second opening, if a shaft, shall be supplied  
30 with a stairway, constructed in the manner designated in this

1 section or with suitable machinery for safely lowering and  
2 hoisting persons in case of an emergency.

3 (i) Slope openings.--At any mine where one of the openings  
4 required is a slope and is used as a means of ingress and egress  
5 by the employees, and where the angle of descent of the slope  
6 exceeds 15 degrees and its length from the mouth of the opening  
7 exceeds 1,000 feet, the employees shall be lowered into and  
8 hoisted from the mine at a speed not to exceed six miles per  
9 hour. At any mine where the angle of descent of the slope  
10 averages from five to 15 degrees and its length exceeds 3,000  
11 feet, the employees shall be lowered into and hoisted from the  
12 mine at a speed not to exceed six miles per hour, provided,  
13 however, that when a separate travelingway is provided at any  
14 such slope, the owner or operator may, at the owner's or  
15 operator's option, be exempt from the requirements of this  
16 section if the angle of the travelingway does not exceed 20  
17 degrees.

18 Section 275. Mining close to abandoned workings.

19 The superintendent shall not permit the mining of coal in any  
20 seam the entire distance to a permit boundary, not including  
21 boundaries around reservations or along crop lines, when on the  
22 adjoining property there are mine workings in the seam within  
23 3,000 feet of the permit boundary. A barrier pillar shall be  
24 left, from the operation to the permit boundary, of not less  
25 than ten feet plus two feet for every foot or part of a foot of  
26 thickness of the bed measured from the roof to the floor, plus  
27 five feet for each 100 feet or part of 100 feet of cover over  
28 the bed at the permit boundary. If the coal on one side of the  
29 permit boundary has been mined, prior to the effective date of  
30 this section, closer to the permit boundary than permitted, the

1 barrier pillar to be left in the mine approaching the permit  
2 boundary shall be at least equal, when added to that already  
3 left in the adjoining mine, to that required on both sides of  
4 the permit boundary. If, in the opinion of the department or the  
5 superintendent of either mining property, the barrier pillar is  
6 deemed insufficient, after due notice to the operator of the  
7 adjoining mining property, one-half of the barrier pillar shall  
8 be left on each side of the permit boundary, except as provided  
9 in this section. The department, the superintendent or owner of  
10 either mining property shall determine the thickness necessary  
11 to afford safety and protection. If it is agreed by the  
12 department and superintendents of the adjoining coal mining  
13 properties that the permit boundary is so located that there is  
14 no danger to property or lives in mining coal on either or both  
15 sides of the permit boundary up to the permit boundary, then  
16 mining to the permit boundary shall be lawful if all danger from  
17 accumulated water and gas shall have first been removed by  
18 driving a passageway to tap and drain off any accumulations of  
19 water and gas, as provided for in this act.

20 Section 276. Lubrication and storage of flammable lubricants.

21 The oiling or greasing of any cars inside any mine is  
22 strictly prohibited unless the place where the oil or grease is  
23 used is thoroughly cleaned at least once a day to prevent the  
24 accumulation of waste oil or grease. Not more than two days'  
25 supply of flammable oil or lubricant shall be stored in any  
26 portion of a mine unless it is kept in a fireproof building or a  
27 structure cut out of solid rock. Oil or grease stored in the  
28 face area shall be kept in approved containers and away from  
29 power wires and electric equipment. Accumulations of spilled oil  
30 or grease shall be rendered harmless. Excessive accumulations

1 shall be removed from the mine. Closed metal containers shall be  
2 provided for the storage of oily rags or waste until removed for  
3 disposal. If any flammable oil or lubricants are stored  
4 underground, all reasonable safety practices shall be observed  
5 in order to minimize any dangers of fire.

6 Section 277. Approved lighting and gas detection devices in  
7 mines.

8 (a) Lighting.--It shall be unlawful to use open lights in  
9 mines, and only approved electric cap lamps, approved  
10 flashlights, approved safety lamps and other approved lighting  
11 equipment shall be used in mines.

12 (b) Gas detection devices.--All approved gas detection  
13 devices used for examining mines shall be in the care of the  
14 mine foreman or some other competent person appointed by the  
15 mine foreman, who shall have a duty to examine, test and deliver  
16 them in a safe condition to the individuals when entering the  
17 mine and to receive gas detection devices from the individuals  
18 when returning from work.

19 (c) Number of devices.--At every mine, a sufficient number  
20 of approved gas detection devices shall be kept in good  
21 condition for use in case of emergency.

22 (d) Entrusting of devices.--No approved gas detection  
23 devices shall be entrusted to any person for use in a mine until  
24 the person has given satisfactory evidence to the mine foreman  
25 that he understands the proper use of the gas detection device  
26 and the danger of tampering with the device.

27 (e) Duty to return device.--It shall be the duty of every  
28 person who knows their approved gas detection device is  
29 defective to return it immediately to a mine official.

30 Section 278. Unauthorized entry into mine.

Any person who enters a mine without authorization from the superintendent commits a misdemeanor of the second degree. This section shall not be applicable to any person who enters a mine in the performance of any duty imposed upon him by this act.

Section 279. Passing by or removing danger signals.

Except as specifically authorized in this act, no employee or other person shall pass by any danger signal into any mine, or into any portion of any mine, or remove any danger signal before the mine or portion of the mine has been examined and reported to be safe. Any employee or other person shall not pass by any danger signal placed at the entrance to a working place, or any other place in the mine, or remove the danger signal without permission from the mine foreman, the assistant mine foreman or the mine examiner.

Section 280. Miners to remain in work areas.

Each miner shall remain during working hours in the work area assigned by the mine foreman or the assistant mine foreman.

Section 281. Sealing openings.

(a) Permanently abandoned shafts.--Every shaft permanently abandoned and taken out of service shall be filled for a distance of 25 feet with incombustible material.

(b) Out of service openings.--Every slope, drift or tunnel permanently taken out of service shall be filled for a distance of 25 feet with incombustible material.

(c) Drillholes and boreholes.--All drillholes and boreholes permanently taken out of service after the effective date of this act shall be effectively plugged or sealed.

(d) Openings available for future use.--Every shaft, slope, drift or tunnel, temporarily taken out of service, which may be used for future mining purposes shall be properly sealed or

1 fenced.

2 Section 282. Ladders in mines.

3 Permanently installed ladders in mines that are more than ten  
4 feet in length and set on an angle of 60 degrees or more with  
5 the horizontal shall be provided with substantial backguards,  
6 and all ladders shall be maintained in good repair.

7 Section 283. Inside structures to be of incombustible  
8 materials.

9 All buildings or structures in any bituminous coal mine shall  
10 be constructed of incombustible materials.

11 Section 284. Washhouses.

12 It shall be the duty of the operator or superintendent of a  
13 mine to provide a suitable building, convenient to the principal  
14 entrance of the mine, for the use of employees of the mine to  
15 wash and change clothes. The building shall be maintained in  
16 good order and be properly lighted and heated, shall be provided  
17 with hot and cold running water and facilities for persons to  
18 wash and shall include adequate sanitary facilities. The cost of  
19 providing and maintaining the conveniences and facilities shall  
20 be defrayed by the owner or operator of mine.

21 CHAPTER 3

22 ELECTRICAL EQUIPMENT

23 Section 301. Duties of mine foreman and superintendent.

24 It shall be the duty of the mine foreman and superintendent  
25 to see that the requirements of this chapter for the  
26 installation and maintenance of electrical equipment are  
27 observed in and around coal mines.

28 Section 302. Definitions.

29 As used in this chapter, the following words and terms shall  
30 have the meanings given to them in this section unless the



1 context clearly indicates otherwise:

2 "Armored cable." A cable provided with a wrapping of metal,  
3 usually steel wires or tapes, primarily for the purpose of  
4 mechanical protection.

5 "Borehole cable." A cable designed for vertical suspension  
6 in a borehole or shaft and is used for power circuits in a mine.

7 "Branch circuit." A tap taken off a main circuit.

8 "Cable sheath." A covering consisting of composition tapes,  
9 compound jackets of natural or synthetic rubber, or  
10 thermoplastic or fiber braids applied over the conductor  
11 assembly and insulation of multiple conductor cables.

12 "Circuit breaker." A device which may be controlled by  
13 relaying or protective equipment for interrupting a circuit  
14 between separable contacts under normal or abnormal conditions.

15 "Delta-connected." A delta-connected power system is one in  
16 which the windings of transformers or AC generators are  
17 connected to form a triangular phase relationship, with the  
18 phase conductors connected to each point of the triangle.

19 "Difference of potential." The difference of electrical  
20 pressure or electromotive force existing between any two points  
21 of an electrical system, or between any point of a system and  
22 the earth, as determined by a voltmeter or other suitable  
23 instrument.

24 "Effectively grounded." Grounded through a grounding  
25 connection of sufficiently low impedance, inherent or  
26 intentionally added, or both, so that fault grounds which may  
27 occur cannot build up voltages in excess of limits established  
28 for apparatus, circuits or systems so grounded.

29 "Electrical face equipment." Mobile or portable mining  
30 machinery having electric motors or accessory equipment normally

1 installed or operated in by the last open crosscut in any entry  
2 or room.

3 "Electric system." All electric equipment and circuits that  
4 pertain to the operation of the mine and are under control of  
5 the mine management.

6 "Explosion-proof or flame-proof." Casings or enclosures  
7 which, when completely filled with a mixture of methane and air  
8 and the same exploded, are capable of either entirely confining  
9 the products of the explosion within the casing or discharging  
10 them from the casing so that they cannot ignite a mixture of  
11 methane and air, combined in proportions most sensitive to  
12 ignition and entirely surrounding the points of discharge, and  
13 in most intimate proximity with the points of discharge.

14 "Flame-resistant cable." A cable that meets the MSHA testing  
15 requirements for flame resistance and has been assigned an  
16 approval. A cable shall also be considered flame-resistant if it  
17 meets the criteria for flame resistance by a nationally  
18 recognized testing lab that is equivalent to the MSHA testing  
19 criteria and that is appropriately identified. All flame-  
20 resistant cables used underground shall have the approval number  
21 embossed or indented on the jacket at intervals not to exceed 12  
22 feet.

23 "Ground." A conducting connection, whether intentional or  
24 accidental, between an electric circuit or equipment and earth  
25 or to some conducting body which serves in place of the earth.

26 "Grounding conductor." A metallic conductor used to connect  
27 the metal frame or enclosure of an equipment, device or wiring  
28 system with an effective grounding medium.

29 "High voltage." Voltage higher than 1,000 volts nominal.

30 "Lightning arrestor." A protective device for limiting surge

1 voltages on equipment by discharging or bypassing surge current  
2 and for preventing continued flow of current to ground.

3 "Low voltage." Voltage up to 660 volts nominal.

4 "Machine operator." A person who possesses a machine runners  
5 certification and is placed in charge of a portable or mobile  
6 face machine of any sort where a gas examination is required  
7 under this act or regulations promulgated under this act.

8 "Medium voltage." Voltage from 661 to 1,000 volts nominal.

9 "Mine power center." A combined transformer and distribution  
10 unit which may include a rectifier, complete within a metal  
11 enclosure, from which one or more low-voltage, medium-voltage or  
12 high-voltage power circuits are taken.

13 "Neutral." A neutral point of connection established through  
14 the use of a grounding or zig-zag transformer with a normally  
15 ungrounded delta power system.

16 "Neutral point." The connection point of transformer or  
17 generator windings from which the voltage to ground is nominally  
18 zero and is the point generally used for system grounding in a  
19 wye-connected AC power system.

20 "Nonmetallic armor." A tough outer covering or cable sheath  
21 of rubber, rubber compound or thermoplastic designed to protect  
22 the cable conductors and insulation from abrasion or other  
23 damage from external sources.

24 "Portable trailing cable." A flexible cable or cord used for  
25 connecting mobile, portable or stationary equipment in mines to  
26 a trolley system or other external source of electric energy  
27 where permanent mine wiring is prohibited or impracticable.

28 "Potential of a circuit." The voltage of a circuit machine  
29 or any piece of electrical apparatus is the potential difference  
30 normally existing between the conductors of such circuit or the

1 terminals of the machine or apparatus.

2 "Primary ground." A low impedance ground bed or system  
3 consisting of several interconnected ground rods or buried  
4 conducting mesh, or both, located near an outdoor substation and  
5 used as a lightning arrestor or station ground or, separately,  
6 as a basic ground for one conductor of a power transmission or  
7 distribution system. A single ground rod of any length is not  
8 considered a primary ground.

9 "Protection." Fuses or other suitable automatic circuit-  
10 interrupting devices for preventing damage to circuits,  
11 equipment and abnormal personnel conditions, such as over-  
12 current, high or low voltage and single phasing.

13 "Rectifiers." Alternating current to direct-current power  
14 conversion devices of the mercury-arc, silicon, selenium or  
15 other type.

16 "Shielded cable." A cable in which the insulated conductor is  
17 covered with a conductive material for the purpose of clearing  
18 ground faults.

19 "Voltage." The phase-to-phase or line-to-line root-mean-  
20 square value assigned to a circuit or system for designation at  
21 its voltage class. Actual voltage at which the circuit or  
22 systems operated may vary from the normal voltage with a range,  
23 which permits satisfactory operation of the equipment. The  
24 difference of electrical pressure or electromotive force  
25 existing between any two points of an electrical system, or  
26 between any point of a system and earth, as determined by a volt  
27 meter or other instrument. The term shall be synonymous the term  
28 potential and shall mean electrical pressure.

29 "Wye-connected." A system in which one end of each phase  
30 winding of transformers or AC generators are connected together

1 to form a neutral point, and the other ends of the windings are  
2 connected to the phase conductors.

3 "Zig-zag transformer." A three-phase transformer used to  
4 provide a neutral point on delta systems and capable of carrying  
5 continuously the maximum ground fault current of the system.

#### 6 Section 303. Plan of electrical system.

7 A plan shall be kept at the mine showing the location of all  
8 stationary electrical apparatuses in connection with the mine  
9 electrical system, including permanent cables, conductors,  
10 switches and trolley lines. The plan shall be of sufficient size  
11 to show clearly the position of the apparatus, and the scale  
12 shall not be less than 500 feet per inch. There shall be stated  
13 on the plan the capacity in horsepower of each motor, and in  
14 kilowatts of each generator, rectifier or transformer, and the  
15 nature of its duty. The plans shall be corrected as often as may  
16 be necessary to keep them up to date or at intervals not  
17 exceeding six months.

#### 18 Section 304. Protection against shock.

19 (a) Electrical work.--No electrical work shall be performed  
20 on low-voltage, medium-voltage or high-voltage distribution  
21 circuits or equipment except by a qualified person or by a  
22 person trained to perform electrical work and to maintain  
23 electrical equipment under the direct supervision of a qualified  
24 person. Disconnecting devices shall be locked out and suitably  
25 tagged by the persons who perform the work, except that in cases  
26 where locking out is not possible, the devices shall be opened  
27 and suitably tagged by such persons. Locks or tags shall be  
28 removed only by the person who installed them or, if the persons  
29 are unavailable, by persons authorized by the operator or the  
30 operator's agent.

1 (b) Insulating materials.--Mats of rubber, insulated  
2 platform or other suitable insulating materials shall be  
3 provided at all stationary transformers, rectifiers, motors and  
4 generators and their controls, except portable and mobile  
5 equipment. Gloves or mats of rubber or other suitable insulating  
6 material shall be provided by the operator and used by qualified  
7 persons when energized parts of electrical apparatus have to be  
8 handled for the purpose of adjustment.

9 Section 305. Restoration from shock.

10 Instruction shall be posted in every generating, transforming  
11 and motor room and at the entrance to the mine containing  
12 directions as to the restoration of persons suffering from  
13 electric shock. All employees working in connection with  
14 electrical apparatus shall be familiar with and competent to  
15 carry out the instructions.

16 Section 306. Report of defective equipment.

17 In the event of a breakdown or damage or injury to any  
18 portion of the electrical equipment in a mine, overheating, the  
19 appearance of sparks or arcs outside enclosed casings or in the  
20 event of any portion of the equipment not a part of the  
21 electrical circuit becoming energized, the equipment shall be  
22 disconnected from its source of power, the occurrence shall be  
23 promptly reported to a mine official and the equipment shall not  
24 be used again until necessary repairs are made.

25 Section 307. Damage or alteration to mine electrical system.

26 No person shall willfully damage or without authority alter  
27 or make connections to any portion of a mine electrical system.

28 Section 308. Capacity.

29 All electrical apparatus and conductors shall be sufficient  
30 in size and power for the work they may be called upon to do

1 and, as prescribed in this act, be efficiently covered or  
2 safeguarded. The electrical apparatus and conductors shall be  
3 installed, operated and maintained to reduce danger from  
4 accidental shock or fire to the minimum and shall be constructed  
5 and operated so that the rise in temperature caused by ordinary  
6 operation will not injure the insulating materials. Where these  
7 conditions are not met, affected equipment shall be removed from  
8 service until corrective action is taken.

9 Section 309. Joints in conductors.

10 All joints in conductors shall be mechanically and  
11 electrically efficient. Suitable connectors or screw clamps  
12 shall be used. All joints in insulated wire shall, after the  
13 joint is complete, be reinsulated to at least the same extent as  
14 the remainder of the wire.

15 Section 310. Cables entering fittings.

16 The exposed ends of cables where they enter fittings of any  
17 description shall be protected and finished off so that moisture  
18 cannot enter the cable, or the insulating material, if of an  
19 oily or viscous nature, leak. Where unarmored cables or wires  
20 pass through metal frames or into boxes or motor casings, the  
21 holes shall be substantially bushed with insulating bushings  
22 and, where necessary or required, with gas-tight bushings which  
23 cannot readily become displaced.

24 Section 311. Switches, fuses and circuit breakers.

25 (a) Construction.--Fuses and automatic circuit breakers  
26 shall be constructed as to effectively interrupt the current on  
27 short circuit or when the current through them exceeds a  
28 predetermined value. Open type fuses shall be provided with  
29 terminals. Circuit breakers shall be of adequate interrupting  
30 capacity.

1 (b) Trip setting.--Circuit breakers used to protect feeder  
2 circuits shall be set to trip when the current exceeds by more  
3 than 50% of the rated capacity of the feeder. In case the feeder  
4 is subjected to overloads sufficient to trip the circuit breaker  
5 but of short duration, the circuit breaker may be equipped with  
6 a device which will prevent its acting unless the overload  
7 persists for period longer than ten seconds. Trip current shall  
8 be indicated at the circuit breaker.

9 (c) Fuses.--Fuses shall be stamped or marked or shall have a  
10 label attached indicating the maximum current which they are  
11 intended to carry. Fuses shall only be adjusted or replaced by a  
12 competent person authorized by the mine foreman.

13 (d) Protective fuses.--Fuses used to protect feeders shall  
14 be a less current rating than the feeder.

15 (e) Incombustible base requirement.--All switches, circuit  
16 breakers and fuses shall have incombustible bases.

17 Section 312. Lightning protection.

18 If the surface transmission lines of low voltage or medium  
19 voltage from the generating station are overhead, there shall be  
20 lightning arrestors installed at the generating station. If the  
21 distance from the generating station to the point where the line  
22 enters the mine is more than 500 feet, an additional arrestor  
23 shall be installed at that point.

24 Section 313. Underground power supply.

25 (a) Ground detectors.--All underground systems of  
26 distribution that are completely insulated from earth shall be  
27 equipped with properly installed ground detectors of suitable  
28 design which will trip the circuit breaker when a ground fault  
29 is detected. The ground detectors shall be maintained in working  
30 condition.



(b) Protection of circuits leading underground.--

(1) In every completely insulated feeder circuit in excess of 25 kilowatts capacity, leading underground and operating at a potential not exceeding the limits of medium voltage, there shall be provided above ground a circuit breaker arranged to open simultaneously each ungrounded conductor. In addition, a positive disconnect means shall be installed outby the circuit breaker. Overload protection shall be provided to open the circuit breaker in case of overload on any conductor. Fuses may be substituted for circuit breakers in circuits transmitting 25 kilowatts or less. Each power circuit in excess of 50 kilowatts leading underground shall be provided with a suitable ammeter.

(2) Every alternating current feeder circuit leading underground and operating at a potential exceeding the limits of medium voltage shall be provided above ground with a suitable circuit breaker. The breaker shall be equipped with automatic overload trip, arranged to open simultaneously each ungrounded power-carrying conductor. Each circuit shall also be provided with a suitable ammeter.

(c) Cables in shafts, slopes and boreholes.--

(1) All cables passing underground through inclines, boreholes and shafts shall be installed in a manner that will prevent undue strain in the sheath, insulation or conductors and damage by chafing of cables against each other or against the borehole casing or shaft. All ungrounded power conductors in shafts, boreholes and inclines shall be covered with suitable insulating materials and installed to provide a minimum tensile factor of safety of five. Conductors shall be securely fastened and properly supported out of contact with

combustible materials. When the weight, length and construction of a cable are such that suspension from its upper end only would subject the cable to possible damage, it shall be supported at intervals necessary to prevent undue strains in the sheath, insulation and conductors and to provide a minimum tensile factor of safety of five. Adequate protection shall be provided so that no damage can result from water, electrolysis, moving cages, skips, ice, coal or other falling or moving materials.

(2) Installation of direct-current and alternating-current cables carrying in excess of 25 kilowatts in the same borehole shall require approval of the department.

(d) High-voltage underground transmission systems.--

(1) High-voltage conductors or cables leading underground and extending underground shall be of the flame-resistant type with either a rubber, plastic or armor sheath meeting the requirements of the department for flame resistance. When the cable is fed by high-voltage systems other than that described in this chapter, it shall be either metallic armored, installed in rigid steel conduit or buried one foot below combustible material. When circuit and protective requirements are met, the cable construction and method of installation may be that described in this chapter. Cables shall be adequate for the intended current and voltage. Splices made in cable shall provide continuity of all components and shall be made in accordance with cable manufacturers' recommendations. A competent person designated by the mine electrician shall supervise the making of the splices.

(e) Braid covered cable.--

1           (1) No power wires or cables having what is commonly  
2           termed as weatherproof insulation or insulation consisting of  
3           braided covering, which is susceptible to moisture absorption  
4           from the outer surface to the conductor, shall be installed  
5           in a mine.

6           (2) All insulated power cables purchased for use in a  
7           mine shall be protected by a flame-resistant jacket and  
8           assigned an approval number unless either armored or  
9           installed in rigid steel conduit, a metal enclosure or a  
10          fireproof room.

11          (f) Ventilation.--

12          (1) Bare power conductors shall not be installed in an  
13          air current that has passed through or by the first working  
14          place in the air split.

15          (2) High-voltage transmission cable, high-voltage motors  
16          and high-voltage transformers shall not be installed in any  
17          air current that has passed through or by the first working  
18          place in the air split.

19          (g) Underground cables in haulage roads.--

20          (1) Where the cables or feed wires, other than trolley  
21          wires, in main haulage roads cannot be kept at least 12  
22          inches from any part of a mine car or locomotive, they shall  
23          be specially protected by proper guards.

24          (2) Cables and wires, except trailing or portable cables  
25          or bare return cables, shall be installed on roofs, ribs,  
26          walls or timbers by means of efficient insulators. All  
27          electric cables constantly kept in rooms or pillars or other  
28          work areas shall be carried on suitable supports to within 70  
29          feet of the face of each work area. In no instance shall the  
30          method of support damage the cable jacket or armor.

1           (3) When main or other roads are being repaired or  
2     blasting is being carried on, suitable temporary protection  
3     from damage shall be given to the cables.

4           (4) All other wires, except telephone, shot-firing and  
5     signal wires, shall be on the same side of the road as the  
6     trolley wire.

7           (5) Haulage block signal circuits and other control  
8     circuits powered from the trolley shall be located on the  
9     same side of the road as the trolley.

10          (h) Branch circuit protection.--When the potential of a  
11     branch circuit exceeds the limit of medium voltage, it shall be  
12     protected by a circuit breaker, except as otherwise permitted  
13     under section 331(h). The circuit breaker shall be equipped with  
14     an automatic overload trip arranged to open simultaneously each  
15     ungrounded power carrying conductor. Provisions for positive  
16     disconnection of the branch circuit shall be included.

17          (i) Underground transformer and substation rooms.--

18           (1) Any motor-generator, rectifier except those  
19     described in subsection (j), rotary converter or oil-filled  
20     transformer installed in a mine shall be enclosed in a  
21     fireproof chamber of masonry or in an effectively grounded  
22     approved steel structure. These buildings shall be provided  
23     with automatically closing fire doors, but the automatic  
24     features of fire doors may be omitted if a substation  
25     attendant is employed. The openings of the doors shall be  
26     safeguarded by grillwork so that only authorized persons may  
27     enter the room. No electrical equipment containing  
28     inflammable material shall be placed within eight feet of a  
29     door or opening in the underground building. All underground  
30     substations containing rotary machinery shall have an

1 attendant constantly on duty while rotating machinery is in  
2 operation, unless adequate control and protection of the  
3 equipment is assured by the use of suitable automatic  
4 devices. No transformer, circuit breaker, controller or other  
5 device containing more than 20 gallons of inflammable liquid  
6 shall be placed in any underground substation. A separate  
7 split of air shall adequately ventilate the substation. No  
8 substation shall be built in any mine until the location,  
9 material, construction and method of ventilation for the  
10 substation has received the approval of the department.

11 (2) Main and distribution switch and fuse boards shall  
12 be made of incombustible, moisture-resistant, insulating  
13 material and fixed in as dry a situation as practicable or  
14 shall be of suitable metal construction, exposed portions of  
15 which shall be effectively grounded. All switches, circuit  
16 breakers, rheostats, fuses and instruments used in connection  
17 with underground motor-generators, rotary-converters, high-  
18 voltage motors, transformers, and low-voltage and medium-  
19 voltage motors of more than 50 horsepower or 50 KVA capacity  
20 shall be installed upon a suitable switchboard or in a metal-  
21 clad switchgear structure. Similar equipment for low-voltage  
22 and medium-voltage motors of 50 horsepower and less may be  
23 separately installed if mounted upon insulating bases of  
24 suitable material or effectively metal clad.

25 (j) Clearances.--

26 (1) In underground stations where switchboards are  
27 installed, there shall be a passageway in front of the  
28 switchboard not less than three feet in width, and, if there  
29 are any high-voltage connections at the back of the  
30 switchboard, any passageway behind the switchboard shall not

1 be less than three feet. The floor at the back of the  
2 switchboard shall be properly floored and insulated with  
3 nonconducting material, accessible from each end. In the case  
4 of high-voltage, switchboards shall be kept locked, but the  
5 lock shall allow the door being opened from the inside  
6 without the use of a key.

7 (2) Where the supply is at a voltage exceeding the  
8 limits of medium voltage, there shall be no live metal work  
9 on the front of the main switchboard within seven feet of the  
10 floor or platform, and the space provided under paragraph (1)  
11 shall not be less than four feet. Insulating floors or mats  
12 shall be provided for medium-voltage boards where live metal  
13 work is on the front.

14 (k) Transformers.--The primary of each underground power  
15 transformer shall be protected by a suitable circuit breaker  
16 equipped with automatic overload trip arranged to open  
17 simultaneously each ungrounded power conductor. The primary of a  
18 transformer of less than 25 KVA capacity operated at a potential  
19 lower than high voltage may be protected by fuses. When a  
20 transformer is the only load on a branch circuit, the branch  
21 circuit protection can be considered the transformer protection.

22 (l) Outgoing feeder protection.--Main circuits leaving  
23 underground substations or transformer stations shall be  
24 protected by circuit breakers.

25 (m) Grounding.--All metallic coverings, metal armoring of  
26 cables and the frames and bedplates of generators, transformers  
27 and motors shall be effectively grounded.

28 (n) Identification of hazard.--All high-voltage machines and  
29 apparatus shall be marked to clearly indicate that they are  
30 dangerous, by the use of the words "Danger, High Voltage."

1 (o) Protection of terminals.--All terminals on machines,  
2 motors or equipment over medium-voltage underground shall be  
3 protected with insulating covers or metal covers effectively  
4 connected to the ground.

5 (p) Unauthorized persons.--No person, other than one  
6 authorized by the mine foreman or mine electrician, shall enter  
7 a station or transformer room or interfere with the working of  
8 any connected apparatus.

9 (q) Fire protection.--Rock dust or fire extinguishers  
10 suitable for extinguishing electrical fires shall be kept ready  
11 for immediate use at electrical stations and transformer rooms.

12 (r) Fireproof rectifiers and transformers.--A portable  
13 rectifier with a dry-type transformer, except those using pumped  
14 tubes or glass bulb mercury arc tubes or a dry-type transformer  
15 designed for underground use with adequate automatic electrical  
16 protection and substantially of fireproof construction, fully  
17 metal clad, which will not be in the same location in excess of  
18 one year, may be installed in any intake air current, not beyond  
19 the last open crosscut and not closer than 250 feet along the  
20 air route to pillar workings. The location where the fireproof  
21 rectifier or transformer is installed need not be made fireproof  
22 with masonry or steel, but shall be equipped with doors,  
23 grillwork or otherwise to prevent entry or access by  
24 unauthorized persons.

25 Section 314. Storage battery equipment.

26 (a) General rule.--All storage battery equipment and  
27 charging stations shall be designed, operated and ventilated so  
28 that gas from the batteries will be safely diluted. Storage  
29 battery charging stations shall be on a separate split of air.

30 (b) Flammable materials.--The presence of flammable

1 materials is not permitted in any storage battery room or  
2 charging station. Signs to this effect shall be posted in all  
3 battery rooms or charging stations.

4 (c) Use in face areas.--Storage battery-operated equipment  
5 may be used in face areas when all electrical parts that are  
6 practicable to enclose are enclosed in explosion-proof casings  
7 and the batteries are adequately ventilated.

8 Section 315. (Reserved).

9 Section 316. Electrical equipment.

10 (a) Voltage restriction.--Hand-held tools shall be  
11 restricted to a maximum of 300 volts.

12 (b) Grounding.--The frame of all off-track equipment shall  
13 be effectively grounded through a safety ground conductor in its  
14 trailing cable.

15 (c) Hand-held tools.--Electric drills and other electrically  
16 operated rotating tools intended to be hand held shall be  
17 equipped with an integrally mounted electric switch designed to  
18 break the circuit when the hand releases the switch.

19 (d) Trailing cables.--

20 (1) Trailing cables for equipment shall be safely and  
21 efficiently insulated and constructed with an outer sheath or  
22 jacket of flame-resistant material as approved by the  
23 department.

24 (2) Cables for hand-held tools shall be especially  
25 flexible, heavily insulated and effectively protected from  
26 damage.

27 (3) Each trailing cable in use shall be examined within  
28 two hours of the beginning of each shift by the machine  
29 operator for abrasions and other defects. The machine  
30 operator shall also carefully observe the trailing cable



1 while in use and shall immediately report any defect to the  
2 mine official in charge.

3 (4) In the event of the trailing cable in service  
4 breaking down or becoming damaged in any way, or of it  
5 inflicting a shock upon any person, it shall be put out of  
6 service at once. The faulty cable shall not be used again  
7 until it has been repaired and tested by a properly  
8 authorized person.

9 (5) The trailing cable shall be divided at the machine  
10 to which it is supplying power, but only for such length as  
11 is necessary for making connection to the machine terminals.  
12 The trailing cable, with its outer covering complete, shall  
13 be securely clamped to the machine frame in a manner that  
14 will protect the cable from injury and prevent any mechanical  
15 strains on the single ends connected to the machine  
16 terminals.

17 (6) No more than five temporary splices shall be made in  
18 any trailing cable. After the fifth splice is made, the cable  
19 shall be changed before the machine is operated on the  
20 following shift. Trailing cables on equipment without cable  
21 shall have no temporary splices within 50 feet of the machine  
22 before the machine is operated on the following shift. Cable  
23 jacket repairs not involving conductors or conductor  
24 insulation are not considered temporary splices.

25 (7) Trailing cables shall be hung or adequately  
26 protected to prevent them from being run over and damaged by  
27 mobile machinery.

28 (8) Trailing cables on off-track equipment shall contain  
29 a safety ground conductor, which shall be solidly connected  
30 to the machine frame. Cables found to contain defective

1 grounds shall be repaired before use or shall be replaced.

2 The safety ground conductor shall have a cross-sectional area  
3 of at least 50% of that of a single power conductor unless  
4 used with ground trip protective systems employing ground  
5 fault current limiting devices, in which case a smaller  
6 safety ground may be used.

7 (e) Motors.--In all mines electrical equipment in use inby  
8 the last open crosscut shall have all current-carrying parts  
9 completely enclosed in explosion-proof enclosures. This  
10 requirement shall not include trailing cable, except where  
11 terminated, and shall not include flexible cable as required  
12 between motors, controllers, terminal boxes and other  
13 auxiliaries. The enclosures shall not be opened except by an  
14 authorized person and then only when the power is switched off.  
15 The power shall not be switched on while the enclosures are  
16 open. Only permissible equipment is permitted inby the last  
17 permanent stopping, except in rooms where open-type equipment  
18 may be used only in the intake travelway. This exception does  
19 not include power distribution equipment.

20 (f) Safeguarding.--The person in charge of mobile electrical  
21 equipment shall not leave the machinery while it is working and  
22 shall, before leaving the work area, see that power is cut off  
23 the trailing cables.

24 (g) Explosion-tested compartments.--All explosion-tested  
25 compartments and packing glands shall be maintained as approved  
26 by the department.

27 (h) Detection of gas.--

28 (1) In working places, an approved hand-held gas  
29 detection device shall be provided for use with each machine  
30 when working. If methane gas is detected in an amount of 1%

1 or greater, the person in charge shall immediately stop the  
2 machine, cut off the current at the nearest switch and report  
3 the matter to a mine official.

4 (2) When not in use, equipment shall be parked away from  
5 the face. No electrically operated permissible face equipment  
6 shall be taken in by the last open breakthrough until the  
7 machine operator assures that an inspection for gas has been  
8 made in the place where the machine is to be in operation. If  
9 methane gas is detected in an amount of 1% or greater by a  
10 gas detection device, the machine shall not be taken in. The  
11 place shall be dangered off until the gas has been removed or  
12 rendered harmless.

13 (3) No electrically operated equipment shall be in use  
14 for a period longer than 20 minutes without a check for  
15 methane gas as required under this subsection. If methane gas  
16 is found at 1% or greater, the power shall immediately be  
17 switched off, and the trailing cable shall be disconnected  
18 from the power supply.

19 (4) The person finding gas shall at once report the fact  
20 to the mine foreman, assistant mine foreman or mine examiner,  
21 and the machine shall not again be started in that place  
22 until the mine examiner or a person duly authorized by the  
23 mine foreman has examined it and pronounced it safe.

24 (5) If any electric sparking or arc is produced outside  
25 a coal-cutting or other portable motor, or by the cables or  
26 rails, the machine shall be stopped, disconnected from the  
27 power supply and not be worked again until the defect is  
28 repaired and the occurrence shall be reported to a mine  
29 official.

30 (i) Methane monitors.--

(1) Methane monitors shall be installed on all face-cutting machines and other mechanized equipment used to extract or load coal in a mine. The sensing device for methane monitors shall be installed at the return end of the longwall face. An additional sensing device shall also be installed on the longwall shearing machine, down wind and as close to the cutting head as is practicable. The sensing devices for methane on other types of machines shall be installed as close to the working face as is practicable. Methane monitors shall be maintained in permissible and proper operating conditions and shall be calibrated with a known air-methane mixture at least once every 31 days. To assure that methane monitors are properly maintained and calibrated, the operators shall do all of the following:

(i) Use persons properly trained in the maintenance, calibration and permissibility of methane monitors to calibrate and maintain the devices.

(ii) Maintain a record of all calibration tests of methane monitors. Records shall be maintained in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not subject to alteration.

(iii) Retain the record of calibration tests for one year from the date of the test. Records shall be retained at a surface location at the mine and made available to department representatives and representatives of the mine workers.

(2) When the methane concentrations at any methane monitor reach 1%, the monitor shall give a warning signal.

The warning signal of the methane monitor shall be visible to

1 the mining machine operator, who shall de-energize electric  
2 equipment or shut down diesel equipment on which the monitor  
3 is mounted.

4 (3) The methane monitor shall automatically de-energize  
5 electric equipment or shut down diesel-powered equipment when  
6 the methane accumulation reaches 2% or the methane monitor is  
7 not operating properly.

8 Section 317. Inspection of equipment.

9 (a) Inspection required.--All electrical equipment shall be  
10 inspected by the mine electrician or person designated by the  
11 mine electrician weekly and, where necessary, shall be cleaned  
12 and repaired.

13 (b) Removal of coal dust.--All electric motors and cables in  
14 mechanical sections shall have all excessive coal dust removed  
15 from their exterior surfaces once each operating shift.

16 Section 318. Stationary motors.

17 Every stationary motor underground, together with its  
18 starting equipment, shall be protected by a fuse or circuit-  
19 breaking device on each ungrounded pole and by switches arranged  
20 to entirely cut off the power from the motor. The devices shall  
21 be installed in a convenient position near the motor, and every  
22 stationary underground motor of 100 brake horsepower or over  
23 shall be provided with a suitable meter to indicate the load on  
24 the machine.

25 Section 319. Permanent underground installation.

26 All electrical equipment not covered elsewhere under this  
27 act, and except room hoists and gathering pumps which will  
28 remain in the same location for a period of one year or more,  
29 shall be completely housed in an incombustible structure built  
30 of tile, brick, stone, concrete or grounded steel plates not

1 less than one-eighth inch in thickness, securely joined.

2 Section 320. Underground illumination.

3 (a) Sockets.--In all mines, the sockets of fixed electric  
4 lamps shall be of so-called weatherproof type, the exterior of  
5 which shall be entirely nonmetallic. Flexible lamp cord  
6 connections are prohibited, except for portable lamps as  
7 provided under subsection (c).

8 (b) Lamps.--Electric lamps shall be placed so they cannot  
9 come in contact with combustible material.

10 (c) Portable electric lamps.--Portable electric lamps, other  
11 than battery lamps, shall not be used in connection with the  
12 repair and inspection of machines and equipment in face areas.  
13 When used elsewhere, they shall be protected by a heavy wire  
14 cage completely enclosing both lamp and socket and shall be  
15 provided with a handle to which both cage and socket are firmly  
16 attached and through which the lead-in wires are carried.

17 (d) Electric lamp enclosure.--Electric lamps, when used in  
18 face areas of any mine, shall be installed in explosion-proof  
19 enclosures.

20 (e) Electric lamp replacement.--Electric lamps shall be  
21 replaced by a competent and qualified person in face areas after  
22 an examination for gas has been made with an approved gas  
23 detection device.

24 (f) Underground photography.--Underground photography using  
25 flash bulbs or other sources of artificial illumination shall be  
26 prohibited unless immediately preceded by an examination for gas  
27 by a mine foreman, assistant mine foreman or mine examiner and  
28 the place found safe.

29 Section 321. Telephones and signaling.

30 (a) Telephone service.--Telephone service or equivalent two-

1 way communication facilities shall be provided in all mines  
2 between the surface and each working section that is more than  
3 1,500 feet from the main portal.

4 (b) Telephone lines.--Telephone lines shall be carried on  
5 insulators, installed on the opposite side from power or trolley  
6 wires and, where they cross power or trolley wires, and  
7 insulated adequately.

8 (c) Lightning arrestors.--Lightning arrestors shall be  
9 provided at points where telephone circuits enter the mine.

10 (d) Telephone cables.--Telephone cables permanently  
11 installed in power boreholes containing unarmored power cables  
12 shall be either armored or protected at top and bottom by  
13 insulating transformers.

14 (e) Precautions.--All proper precautions shall be taken to  
15 prevent electric signal and telephone wires from coming into  
16 contact with other electric conductors, whether insulated or  
17 not.

18 (f) Standards generally.--Bells, wires, insulators, contact  
19 makers and other apparatus used in connection with electric  
20 signaling underground shall be of suitable design and of  
21 substantial and reliable construction and erected in such a  
22 manner as to reduce the liability of failures or false signals  
23 to a minimum.

24 (g) Potential.--In the face areas of any mine, the potential  
25 used for signal purposes shall not exceed 24 volts, and bare  
26 wires shall not be used for signal circuits.

27 (h) Voltage on signal circuits.--The voltage on signal  
28 circuits confined to intake air and using insulated conductors  
29 may be greater than 24 volts, but shall not exceed 125 volts  
30 average. This shall not apply to haulage block signal systems.

1 Section 322. Grounding.

2 (a) General rule.--In a direct-current electrical system,  
3 grounding shall consist in so connecting any part of an  
4 electrical system, including frames, to the earth that there  
5 shall be no difference of potential between them.

6 (b) Negative side to be grounded.--Only the negative side of  
7 the direct-current circuit shall be grounded.

8 (c) Rectifier diodes.--Rectifier diodes used at any  
9 bituminous coal mine shall be connected to the supply circuit  
10 through an isolating winding in order that isolation between  
11 alternating current and direct-current systems is effected.

12 (d) Initial installation.--The initial installation of  
13 rectifiers at any bituminous coal mine shall be approved by the  
14 department before being energized.

15 Section 323. Voltage limitation.

16 In no case shall the potential used in the trolley system be  
17 higher than 600 volts.

18 Section 324. Incoming feeder-disconnect switches.

19 Disconnecting switches shall be installed underground in all  
20 main direct-current power circuits within 500 feet of the bottom  
21 of shafts, boreholes or at other places where main power  
22 circuits enter a mine.

23 Section 325. Bonding.

24 Where air or water pipes parallel the grounded return of  
25 power circuits, the return shall be securely bonded to the pipes  
26 at frequent intervals to eliminate the possibility of a  
27 difference of voltage between rails and pipes and to prevent  
28 electrolysis of the pipes. The rail return shall be of  
29 sufficient capacity for the current used, independent of the  
30 capacity of the pipes. On main haulage roads, both rails shall



1 be bonded, except welded track, and cross bonds shall be placed  
2 at points not to exceed 200 feet apart. On secondary haulage  
3 roads, one rail shall be bonded continuously.

4 Section 326. Trolley installation.

5 (a) Trolley wires and feeder lines.--All trolley wires and  
6 feeder lines installed on underground haulage roads shall be  
7 placed as far to one side of the passageway as is practicable,  
8 but not less than six inches outside of line of rail, and  
9 securely supported upon hangers which shall not be more than 24  
10 feet apart and efficiently insulated.

11 (b) Prohibition.--In all mines, trolley and feeder wires  
12 shall not extend beyond the last open crosscut and shall be kept  
13 at least 150 feet from open pillar workings.

14 (c) Switches or circuit breakers.--All branch trolley lines  
15 shall be fitted with either a trolley switch, circuit breaker or  
16 section insulator and line switch or some other device that will  
17 allow the current to be shut off from the branch headings.

18 Switches or circuit breakers shall be provided on haulage roads  
19 to de-energize all trolley and feeder lines at intervals not to  
20 exceed 2,000 feet.

21 Section 327. Connections to trolley.

22 (a) Permanent connections.--All permanent connections to  
23 trolley feeder circuits shall be made with suitable mechanical  
24 connectors. No temporary or permanent connection shall be  
25 wrapped or tied.

26 (b) Temporary connections.--Temporary connections for  
27 portable equipment may be made through fused trolley taps.

28 (c) Safety ground and negative connections.--Safety ground  
29 and negative connections for temporary or permanent  
30 installations shall be made at two separate points, at least six

1 inches apart, and shall be made directly to the track, a bond or  
2 the system ground.

3 Section 328. Guarding.

4 At all landings and partings or other places where  
5 individuals are required to regularly work or pass under trolley  
6 or other bare power wires, which are placed less than six and  
7 one-half feet above top of rail, a suitable protection shall be  
8 provided. This protection shall consist of placing boards along  
9 the wire, which boards shall not be more than five inches apart  
10 nor less than two inches below the lowest point of the wire. The  
11 distance between boards on curves may exceed five inches, but  
12 shall not exceed eight inches. This does not prohibit the use of  
13 other approved devices or methods furnishing equal or better  
14 protection.

15 Section 329. Locomotives.

16 (a) Electric haulage.--Electric haulage by trolley  
17 locomotive is not permitted except on intake air.

18 (b) Certain operation prohibited.--It shall be unlawful to  
19 run or operate a locomotive, fed directly or indirectly from a  
20 trolley wire, by the open entrances to worked out places wherein  
21 the pillars have been drawn or places in which the pillars have  
22 not been drawn but in places where the roof has collapsed.

23 (c) Certain use proscribed.--No open-type electric  
24 locomotive or open-type electric machine of whatsoever type  
25 shall be taken into a working place. Main return airways or  
26 passageways shall not be used as haulageways for electric  
27 locomotives operated from a trolley wire.

28 Section 330. Outdoor substation.

29 The outdoor substation shall be built in accordance with  
30 current Institute of Electrical and Electronics Engineers'

standards and department equipment performance specification and shall include:

(1) Protective fence or enclosure.

(2) Primary or incoming line lightning arrestors.

(3) Positive disconnecting means on the incoming or primary line with a circuit breaker or fuses to interrupt safely any current, normal or abnormal, which might be encountered.

(4) Transformer bank to convert the incoming or primary voltage to the transmission voltage. The use of auto-transformers for this purpose is prohibited. Secondary or underground transmission voltage shall not exceed 15,000 volts, nominal, phase to phase. The transformer may be connected delta-wye, wye-delta or delta-delta. Wye-wye connections shall not be used because of voltage instability under some conditions of load. In the event that the secondary winding is delta-connected, the neutral necessary for the four-wire transmission circuit shall be derived by the use of a three-phase zig-zag or grounding transformer. Where grounding transformers are used, they shall be of sufficient capacity to carry maximum ground fault current continuously. Should the substation primary or supply voltage equal the mine transmission voltage, the main transformer bank may be omitted and the zig-zag transformer used to derive a system neutral if one is not otherwise available.

(5) Secondary lightning arrestors.

(6) Ground fault-current limiting resistor capable of continuously limiting ground fault current to 25 amperes or less. The resistor shall be adequately insulated and shall be protected by a grounded fence or screen unless mounted eight

1 feet or more above ground.

2 (7) Secondary or mine feeder circuit breaker with  
3 interrupting capacity adequate for any possible condition of  
4 fault and no less than the short circuit capacity of the  
5 system supplying power to the breaker. Positive disconnect  
6 means shall be provided on the input and output side of the  
7 breaker. Use of automatic reclosing circuit breakers is  
8 prohibited. Breaker automatic tripping shall be through  
9 protective relays and shall provide, as a minimum, tripping  
10 by undervoltage, instantaneous and inverse time limit phase  
11 overcurrent, ground fault current not exceeding 15 amperes  
12 and ground-continuity check not exceeding seven amperes. The  
13 ground-continuity check circuit shall continuously monitor  
14 the integrity of the neutral circuit leading underground and  
15 shall cause the breaker to open when either the ground or  
16 pilot check wire is broken. An ammeter capable of reading  
17 current in each phase and a voltmeter capable of reading  
18 phase-to-phase voltage shall be provided at the circuit  
19 breaker.

20 (8) Surge protection or station ground bed to which  
21 shall be connected all lightning arrestor grounds, substation  
22 equipment frame grounds, fence, if metallic, and substation  
23 structure, if metallic. There shall be no direct connection  
24 between this ground bed and either the grounded side of the  
25 mine direct-current system or the neutral ground bed  
26 described below.

27 (9) Neutral or primary ground bed located at least 25  
28 feet away from the station ground at its closest point and to  
29 which shall be connected only the inby or load end of the  
30 neutral current limiting resistor. To prevent current

transformer core saturation by stray direct current return currents, or neutral conductor damage, there shall be no direct or metallic connection between any point of the high-voltage alternating current neutral circuit and the mine direct-current ground.

(10) Ground bed resistance shall be measured at least every six months and appropriate action taken to assure the maintenance of four ohms or less of ground bed resistance. A record of these resistance measurements shall be kept in a book provided for that purpose.

Section 331. High-voltage underground transmission system.

(a) Underground.--High-voltage cables leading underground and extending underground shall be of the multiple conductor flame-resistant type with a rubber, plastic or armor sheath meeting the requirements of the department for flame resistance. They shall be equipped with metallic shields around each power conductor. One or more ground conductors shall be provided of a total size either:

- (1) not less than one-half the power conductor size; or
- (2) capable of carrying two times the maximum ground fault current.

There shall also be provided an insulated conductor not smaller than No. 10 AWG for the ground-continuity check circuit. Cables shall be adequate for the intended current and voltage. Splices made in the cable shall provide continuity of all components and shall be made in accordance with the cable manufacturers' recommendations. A competent person designated by the mine electrician shall supervise the making of splices.

(b) Subject to flexing.--High-voltage cables subject to repeated flexing shall be similar in construction to type SH-D

1 in accordance with Insulated Power Cable Engineers Association  
2 standard S-19-81.

3 (c) Couplers.--If couplers are used, they shall be of the  
4 three-phase type with a full metallic shell and shall be  
5 adequate for the voltage and current expected. All exposed metal  
6 on the couplers shall be grounded to the ground conductor in the  
7 cable. The coupler shall be constructed so that the ground  
8 continuity conductor shall be broken first and the ground  
9 conductor shall be broken last when the coupler is being  
10 uncoupled.

11 (d) Equipment passing over or under cable.--At locations  
12 where cables cross haulageways or travelways or where equipment  
13 must pass over or under the cable, the cables shall be either  
14 installed in a trench in the roof, protected by some mechanical  
15 means or buried at least 12 inches below combustible material  
16 and adequately protected from crushing by the weight of  
17 equipment passing over it.

18 (e) Location of installation.--High-voltage cables shall be  
19 installed only in intake airways. They may be installed on  
20 intake haulageways only with the approval of the department. The  
21 cable may be installed by hanging on suitable hooks or clamps,  
22 supported by a suitable messenger cable, burying or installing  
23 in metal conduit. When suspended, the distance between supports  
24 shall not exceed 20 feet, and they shall be so placed that they  
25 do not damage the cable jacket. When hung in a haulage entry  
26 containing a trolley wire, the cable shall be installed at least  
27 12 inches from the trolley wire or feeder wires and away from  
28 the track.

29 (f) Excess cable.--Any excess cable which is connected and  
30 supplying a load shall be coiled, stored on a reel or otherwise

1 stored at a place near the load where it can be protected by  
2 dangling off the storage area. The cable shall not exceed 1,000  
3 feet in length.

4 (g) Frames and enclosures.--Frames and enclosures of high-  
5 voltage switch units, transformers, metallic cable couplers and  
6 splice boxes shall be grounded to the common or primary ground  
7 for the system in the high-voltage cable.

8 (h) Taps or branch circuits.--Taps or branch circuits from  
9 the high-voltage feeder shall be made through circuit breakers  
10 or suitable load break switches.

11 (i) Nonload breaking disconnect switches.--When nonload  
12 breaking disconnect switches are used for sectionalizing high-  
13 voltage circuits, they shall be fully metal clad, equipped with  
14 a door interlock to break the ground-continuity check circuit,  
15 thus tripping the feeding breaker when the door is open, and a  
16 voltmeter or indicating lights to verify that the circuit is  
17 deenergized before the disconnected switches are opened.

18 (j) Applicability.--For the purpose of interpretation and  
19 compliance with subsection (h) and section 313(h), the following  
20 apply:

21 (1) A branch circuit is a subportion of the high-voltage  
22 system, serving one or more loads. The branch circuit begins  
23 at the junction or splitting of the high-voltage system. The  
24 junction consists of the following distinct elements:

25 (i) Input feeder, which delivers power from the  
26 source.

27 (ii) Output feeder, which may extend the feeder to  
28 other parts of the high-voltage system.

29 (iii) Branch circuit.

30 The output feeder is not considered as a branch circuit and

1 is not required to have electrical protection at the  
2 junction, but receives electrical protection either at the  
3 source substation or at some place between the source  
4 substation and the junction. The branch circuit is required  
5 to have protection at the junction.

6 (2) A tap supplies power to the high-voltage loads  
7 located entirely within the enclosure where the connection is  
8 made. Where no splitting of the feeder cable occurs, neither  
9 a tap nor branch is created.

10 (3) A suitable load-break switch, which may be used in  
11 lieu of a circuit breaker, is a gang-operated switch with a  
12 voltage rating not less than the system voltage, capable of  
13 interrupting a current equal to its continuous full load  
14 rating and to be used in conjunction with fuses to provide  
15 overload and short circuit protection for the load being  
16 served.

17 Section 332. Load center.

18 Transmission voltage shall be reduced to machine utilization  
19 voltage by a portable transformer or load center of adequate  
20 capacity for the equipment powered by it. The transformer shall  
21 be of the dry type, ventilated, nonventilated or sealed,  
22 substantially constructed and completely enclosed in a metal  
23 case. The metal enclosure shall be connected to the high-voltage  
24 system ground conductor in the high-voltage cable. Complete load  
25 center construction shall render it essentially fireproof. In  
26 addition to these requirements, the following shall be observed:

27 (1) Connection of the high-voltage cable to the load  
28 center shall be made through a cable coupler of the type  
29 described in section 331(c).

30 (2) The load center shall be equipped with a positive



1 disconnect means on the incoming or high-voltage circuit.  
2 This may consist of a circuit breaker, load-break switch,  
3 disconnect switch or other device. The following apply:

4 (i) If a circuit breaker is used for this purpose,  
5 it shall be equipped with instantaneous and inverse time  
6 limit phase overcurrent and undervoltage relaying  
7 protection.

8 (ii) If a device other than a circuit breaker is  
9 used, it shall be so arranged that it cannot be operated  
10 until the ground continuity check circuit in the high-  
11 voltage cable has opened causing the nearest feeding  
12 circuit breaker to trip.

13 (3) The restriction of section 330(4) pertaining to  
14 transformer connections and use of zig-zag grounding  
15 transformers also apply to the load center.

16 (4) The transformer secondary neutral, direct or  
17 derived, shall be connected to machine trailing cable safety  
18 ground conductors through a ground current limiting resistor  
19 capable of limiting ground fault current to 25 amperes or  
20 less. The inby side of the resistor shall be grounded to the  
21 load center frame if no DC equipment powered from a common  
22 mine DC system can contact the frames of AC equipment powered  
23 by this load center. In the event there is a possibility of  
24 frame contact between AC equipment and DC equipment supplied  
25 from a common DC mine system, the inby side of the resistor  
26 may be insulated from the load center frame and shall be  
27 solidly connected to the DC ground system.

28 (5) The load center shall be equipped with a main  
29 secondary breaker of adequate interrupting capacity with  
30 tripping devices which shall feed individual machine breakers

1 located either in the load center or external to it in a  
2 separate distribution center. External utilization voltage  
3 connections shall be made through receptacles arranged so  
4 that they cannot be uncoupled under load.

5 (6) Load centers shall be located on intake air only.  
6 Load centers shall not be located beyond the last open  
7 crosscut or located closer than 250 feet along the air route  
8 to pillar workings.

9 Section 333. Distribution centers.

10 (a) General rule.--Distribution centers may be used to  
11 distribute utilization power to portable equipment. The  
12 distribution center may be connected to the load center through  
13 one or more cables or conductors protected by flame-resistant  
14 jackets with combined capacity sufficient to carry the maximum  
15 loads that may be encountered. The distribution center shall  
16 contain breakers adequate to interrupt any fault current that  
17 might occur, which shall feed each unit of equipment that is  
18 connected to the distribution center. Each breaker shall be  
19 equipped with tripping devices that will function, on overload,  
20 phase fault and ground fault. Distribution centers shall be  
21 located on intake air only, and shall not be located beyond the  
22 last open crosscut or closer than 150 feet from pillar workings  
23 unless the distribution center shall have an approved explosion-  
24 proof enclosure.

25 (b) Cables.--Utilization voltage cables shall be fitted with  
26 plug couplers and provision made so that cables cannot be  
27 uncoupled under load. All plugs and sockets shall be  
28 substantially constructed, and any exposed metal portions shall  
29 be grounded. Couplers shall be constructed so that the ground  
30 conductor connection is broken last during uncoupling.

1 (c) Ground conductors.--Utilization voltage conductors,  
2 cables or conductor groups shall contain one or more ground  
3 conductors which when combined shall be able to carry safely and  
4 continuously at least twice the maximum ground fault current.

5 (d) Option.--A combined alternating and direct-current  
6 distribution or load center complete within a substantially  
7 fireproof metal enclosure, with a dry type transformer and solid  
8 state rectifier and adequate automatic electrical protection,  
9 may be used to distribute alternating and direct current  
10 utilization power. The power supply to this unit may be low,  
11 medium or high voltage. When high voltage is utilized, the  
12 requirements of section 332 shall apply. When medium or low  
13 voltage is utilized, this section shall apply. However, when an  
14 external DC distribution device is employed, the rectifier  
15 output may be taken through a main DC circuit breaker to that  
16 device without the use of a plug and receptacle system.

17 Section 334. Mandatory safety components of electrical  
18 equipment.

19 (a) Requirement.--Low-voltage, medium-voltage and high-  
20 voltage resistance ground systems shall have ground wire  
21 monitors to continuously monitor the continuity of the grounding  
22 circuits to the equipment affected, except for:

23 (1) Low-voltage and medium-voltage circuits supplying  
24 power to longwall illumination systems.

25 (2) Low-voltage and medium-voltage stationary equipment  
26 installed in accordance with all of the following:

27 (i) The equipment is permanently installed at a  
28 fixed location.

29 (ii) All load components are securely attached to a  
30 common metallic frame or structure.

1 (iii) Each component of the equipment is grounded by  
2 two independent equipment safety grounding, each sized  
3 appropriately.

4 (iv) At least one of the equipment safety ground  
5 conductors to each component is visible for its entire  
6 length. High-voltage resistance grounded systems shall  
7 have ground wire monitors to continuously monitor the  
8 continuity of the grounding circuits. All ground wire  
9 monitors shall be designed and constructed to be  
10 failsafe.

11 (b) Study.--The mining industry shall initiate a study to  
12 enhance the safety of underground direct-current machine cables.  
13 The program shall include an evaluation of ground wire monitors  
14 for use on all direct-current equipment. The program shall  
15 include laboratory and underground testing. The test results  
16 shall be documented and presented to the Board of Coal Mine  
17 Safety no later than 365 days after the effective date of this  
18 act for action by the board.

19 (c) Additional study.--The mining industry shall initiate a  
20 study to enhance the safety of underground cables. The program  
21 shall include an evaluation of metallic shielded cable,  
22 nonmetallic shielded cable and more sensitive ground fault  
23 limiting and detection. The program shall include laboratory and  
24 underground testing. The results shall be documented and  
25 presented to the Board of Coal Mine Safety no later than 365  
26 days after the effective date of this act for action by the  
27 board.

28 (d) Plugs.--If plugs are used on any cable in a mine, the  
29 plugs must be interlocked.

30 Section 335. High-voltage longwalls.

Sections 336 through 344 are electrical safety standards that apply to high-voltage longwall circuits and equipment. All other standards established under this act also apply to longwall circuits and equipment when appropriate. The department shall consider existing Federal interpretations of comparable standards when implementing and enforcing these requirements.

Section 336. Longwall electrical protection.

(a) High-voltage circuits.--High-voltage circuits must be protected against short circuits, overloads, ground faults and undervoltages by circuit-interrupting devices of adequate interrupting capacity as follows:

(1) Current settings of short-circuit protective devices must not exceed the setting specified in approval documentation or 75% of the minimum available phase-to-phase short-circuit current, whichever is less.

(2) Time-delay settings of short-circuit protective devices used to protect any cable extending from the section power center to a motor-starter enclosure must not exceed the settings specified in approval documentation or one-quarter second, whichever is less. Time-delay settings of short-circuit protective devices used to protect motor and shearer circuits must not exceed the settings specified in approval documentation or three cycles, whichever is less.

(3) Ground-fault currents must be limited by a neutral grounding resistor to not more than:

- (i) six and one-half amperes when the nominal voltage of the power circuit is 2,400 volts or less; or
- (ii) three and three-quarters of an ampere when the nominal voltage of the power circuit exceeds 2,400 volts.

(4) High-voltage circuits extending from the section

1 power center must be provided with all of the following:

2 (i) Ground-fault protection set to cause de-  
3 energization at not more than 40% of the current rating  
4 of the neutral grounding resistor.

5 (ii) A backup ground-fault detection device to cause  
6 de-energization when a ground fault occurs with the  
7 neutral grounding resistor open.

8 (iii) Thermal protection for the grounding resistor  
9 that will de-energize the longwall power center if the  
10 resistor is subjected to a sustained ground fault. The  
11 thermal protection must operate at either 50% of the  
12 maximum temperature rise of the grounding resistor or 150  
13 Centigrade or 302 Fahrenheit, whichever is less, and must  
14 open the ground-wire monitor circuit for the high-voltage  
15 circuit supplying the section power center. The thermal  
16 protection must not be dependent upon control power and  
17 may consist of a current transformer and overcurrent  
18 relay.

19 (5) High-voltage motor and shearer circuits must be  
20 provided with instantaneous ground-fault protection set at  
21 not more than 0.125 of an ampere.

22 (6) Time-delay settings of ground-fault protective  
23 devices used to provide coordination with the instantaneous  
24 ground-fault protection of motor and shearer circuits shall  
25 not exceed one-quarter second.

26 (7) Undervoltage protection shall be provided by a  
27 device which operates on low voltage to cause and maintain  
28 the interruption of power to a circuit to prevent automatic  
29 restarting of the equipment.

30 (b) Current transformers.--Current transformers used for the

1 ground-fault protection specified in subsection (a)(1), (4)(i)  
2 and (5) must be single window type and must be installed to  
3 encircle all three-phase conductors. Equipment safety grounding  
4 conductors must not pass through or be connected in series with  
5 ground-fault current transformers.

6 (c) Test circuit.--Each ground-fault current device  
7 specified in subsection (a)(4)(i) and (5) must be provided with  
8 a test circuit that will inject a primary current of 50% or less  
9 of the current rating of the grounding resistor through the  
10 current transformer and cause each corresponding circuit-  
11 interrupting device to open.

12 (d) Prohibition.--Circuit-interrupting devices shall not  
13 reclose automatically.

14 (e) Multiple cables.--Where two or more high-voltage cables  
15 are used to supply power to a common bus in a high-voltage  
16 enclosure, each cable must be provided with ground wire  
17 monitoring. The ground wire monitoring circuits must cause de-  
18 energization of each cable when either the ground monitor or  
19 grounding conductor of any cable becomes severed or open. On or  
20 after the effective date of this section, parallel-connected  
21 cables on newly installed longwalls must be protected as  
22 follows:

23 (1) When one circuit-interrupting device is used to  
24 protect parallel-connected cables, the circuit-interrupting  
25 device must be electrically interlocked with the cables so  
26 that the device will open when any cable is disconnected.

27 (2) When two or more parallel circuit-interrupting  
28 devices are used to protect parallel-connected cables, the  
29 circuit-interrupting devices must be mechanically and  
30 electrically interlocked. Mechanical interlocking shall cause

all devices to open simultaneously and electrical interlocking shall cause all devices to open when any cable is disconnected.

Section 337. Longwall disconnect switches.

(a) Section power center.--The section power center must be equipped with a main disconnecting device installed to de-energize all cables extending to longwall equipment when the device is in the open position.

(b) Maintenance.--Disconnecting devices for motor-starter enclosures must be maintained in accordance with the department's approval. The compartment for the disconnect device must be provided with a caution label to warn miners against entering the compartment before de-energizing the incoming high-voltage circuits to the compartment.

(c) Rating.--Disconnecting devices must be rated for the maximum phase-to-phase voltage of the circuit in which they are installed and for the full load current of the circuit that is supplied power through the device.

(d) Installation.--Each disconnecting device must be designed and installed so that:

(1) Visual observation determines that the contacts are open without removing any cover.

(2) All load power conductors can be grounded when the device is in the open position.

(3) The device can be locked in the open position.

(e) Capability.--Disconnecting devices, except those installed in explosion-proof enclosures, shall be capable of interrupting the full load current of the circuit or designed and installed to cause the current to be interrupted automatically prior to the opening of the contacts of the



1 device. Disconnecting devices installed in explosion-proof  
2 enclosures shall be maintained in accordance with the  
3 department's approval.

4 Section 338. Guarding of longwall cables.

5 (a) High-voltage cables.--High-voltage cables shall be  
6 guarded at the following locations:

7 (1) Where persons regularly work or travel over or under  
8 the cables.

9 (2) Where the cables leave cable handling or support  
10 systems to extend to electric components.

11 (b) Intent and design of guarding.--Guarding shall minimize  
12 the possibility of miners contacting the cables and protect the  
13 cables from damage. The guarding shall be made of grounded metal  
14 or nonconductive flame-resistant material.

15 Section 339. Longwall cable-handling and support systems.

16 Longwall mining equipment shall be provided with cable-  
17 handling and support systems that are constructed, installed and  
18 maintained to minimize the possibility of miners contacting the  
19 cables and to protect the high-voltage cables from damage.

20 Section 340. Use of longwall insulated cable handling  
21 equipment.

22 (a) General rule.--Energized high-voltage cables shall not  
23 be handled except when motor or shearer cables need to be  
24 trained. When cables need to be trained, high-voltage insulated  
25 gloves, mitts, hooks, tongs, slings, aprons or other personal  
26 protective equipment capable of providing protection against  
27 shock hazard shall be used to prevent direct contact with the  
28 cable.

29 (b) Standards, examinations, testing and replacement.--High-  
30 voltage insulated gloves, sleeves and other insulated personal

1 protective equipment shall:

2 (1) have a voltage rating of at least Class 1, 7,500  
3 volts, that meets or exceeds ASTM F496-97, Standard  
4 Specification for In-Service Care of Insulating Gloves and  
5 Sleeves (1997);

6 (2) be examined before each use for visible signs of  
7 damage;

8 (3) be removed from the underground area of the mine or  
9 destroyed when damaged or defective; and

10 (4) be electrically tested every six months.

11 Section 341. Maintenance.

12 Compartment separation and cover interlock switches for  
13 motor-starter enclosures shall be maintained in accordance with  
14 section 342.

15 Section 342. High-voltage longwall mining systems.

16 (a) General rule.--In each high-voltage motor-starter  
17 enclosure, with the exception of a controller on a high-voltage  
18 shearer, the disconnect device compartment,  
19 control/communications compartment and motor contactor  
20 compartment shall be separated by barriers or partitions to  
21 prevent exposure of personnel to energized high-voltage  
22 conductors or parts. Barriers or partitions shall be constructed  
23 of grounded metal or nonconductive insulating board.

24 (a.1) High-voltage shearers.--In each motor-starter  
25 enclosure on a high-voltage shearer, the high-voltage components  
26 shall be separated from lower voltage components by barriers or  
27 partitions to prevent exposure of personnel to energized high-  
28 voltage conductors or parts. Barriers or partitions shall be  
29 constructed of grounded metal or nonconductive insulating board.

30 (b) Interlock switches.--Each cover of a compartment in the

1 high-voltage motor-starter enclosure containing high-voltage  
2 components shall be equipped with at least two interlock  
3 switches arranged to automatically de-energize the high-voltage  
4 components within that compartment when the cover is removed.

5 (c) Circuit-interrupting devices.--Circuit-interrupting  
6 devices shall be designed and installed to prevent automatic  
7 reclosure of the cover.

8 (d) Transformers.--Transformers with high-voltage primary  
9 windings that supply control voltages shall incorporate grounded  
10 electrostatic (Faraday) shielding between the primary and  
11 secondary windings. The shielding shall be connected to the  
12 equipment ground by a minimum No. 12 AWG grounding conductor.  
13 The secondary nominal voltage shall not exceed 120 volts, line  
14 to line.

15 (e) Test circuits.--Test circuits shall be provided for  
16 checking the condition of ground wire monitors and ground-fault  
17 protection without exposing personnel to energized circuits.  
18 Each ground-test circuit shall inject a primary current of 50%  
19 or less of the current rating of the grounding resistor through  
20 the current transformer and cause each corresponding circuit-  
21 interrupting device to open.

22 (f) Disconnect devices.--Each motor-starter enclosure, with  
23 the exception of a controller on a high-voltage shearer, shall  
24 be equipped with a disconnect device installed to de-energize  
25 all high-voltage power conductors extending from the enclosure  
26 when the device is in the open position.

27 (1) When multiple disconnect devices located in the same  
28 enclosure are used to satisfy the requirement of this  
29 subsection, they shall be mechanically connected to provide  
30 simultaneous operation by one handle.

1           (2) The disconnect device shall be rated for the maximum  
2 phase-to-phase voltage and the full-load current of the  
3 circuit in which it is located and installed so that:

4           (i) visual observation determines that the contacts  
5 are open without removing any cover;

6           (ii) the load-side power conductors are grounded  
7 when the device is in the open position;

8           (iii) the device can be locked in the open position;

9           (iv) when located in an explosion-proof enclosure,  
10 the device shall be designed and installed to cause the  
11 current to be interrupted automatically prior to the  
12 opening of the contacts; and

13           (v) when located in a nonexplosion-proof enclosure,  
14 the device shall be designed and installed to cause the  
15 current to be interrupted automatically prior to the  
16 opening of the contacts, or the device shall be capable  
17 of interrupting the full-load current of the circuit.

18       (g) Starters to be interlocked.--Control circuits for the  
19 high-voltage motor starters shall be interlocked with the  
20 disconnect device so that:

21           (1) The control circuit can be operated with an  
22 auxiliary switch in the test position only when the  
23 disconnect device is in the open and grounded position.

24           (2) The control circuit can be operated with the  
25 auxiliary switch in the normal position only when the  
26 disconnect switch is in the closed position.

27       (h) Determination of minimum available fault current.--A  
28 study to determine the minimum available fault current shall be  
29 submitted to the department to ensure adequate protection for  
30 the length and conductor size of the longwall motor, shearer and

1 trailing cables.

2 (i) Shielded construction of certain cables.--Longwall motor  
3 and shearer cables with nominal voltages greater than 660 volts  
4 shall be made of a shielded construction with a grounded  
5 metallic shield around each power conductor.

6 (j) Instantaneous ground fault protection.--High-voltage  
7 motor and shearer circuits shall be provided with instantaneous  
8 ground fault protection of not more than 0.125 of an ampere.  
9 Current transformers used for this protection shall be of the  
10 single window type and shall be installed to encircle all three-  
11 phase conductors.

12 Section 343. Longwall electrical work.

13 (a) Qualified workers.--Electrical work on all circuits and  
14 equipment associated with high-voltage longwalls shall be  
15 performed by MSHA-qualified persons.

16 (b) Procedures for work on circuits and equipment.--Except  
17 for troubleshooting and testing of energized circuits and  
18 equipment as provided under subsection (d), prior to performing  
19 electrical work a qualified person shall do the following:

20 (1) De-energize the circuit or equipment with a circuit-  
21 interrupting device.

22 (2) Open the circuit-disconnecting device. On high-  
23 voltage circuits, ground the power conductors until work on  
24 the circuit is completed.

25 (3) Lock out the disconnecting device with a padlock.  
26 When more than one qualified person is performing work, each  
27 person shall install an individual padlock.

28 (4) Tag the disconnecting device to identify each person  
29 working and the circuit or equipment on which work is being  
30 performed.

1 (c) Restrictions relating to low-voltage, medium-voltage or  
2 high-voltage distribution circuits or equipment.--No electrical  
3 work shall be performed on low-voltage, medium-voltage or high-  
4 voltage distribution circuits or equipment, except by a  
5 qualified person or a person trained to perform electrical work  
6 and to maintain electrical equipment under the direct  
7 supervision of a qualified person. Disconnecting devices shall  
8 be locked out and suitably tagged by the persons who perform the  
9 work, except that in cases where locking out is not possible,  
10 the devices shall be opened and suitably tagged by persons  
11 performing the work. Locks or tags shall be removed only by the  
12 persons who installed them or, if such persons are unavailable,  
13 by persons authorized by the operator or his agent.

14 (d) Troubleshooting and testing of energized circuits.--  
15 Troubleshooting and testing of energized circuits must be  
16 performed only:

17 (1) On low-voltage and medium-voltage circuits.

18 (2) When the purpose of troubleshooting and testing is  
19 to determine voltages and currents.

20 (3) By persons qualified to perform electrical work and  
21 who wear protective gloves. Rubber-insulating gloves shall be  
22 rated at least for the nominal voltage of the circuit when  
23 the voltage of the circuit exceeds 120 volts nominal and is  
24 not intrinsically safe.

25 (e) Troubleshooting and testing of multiple voltage  
26 circuits.--Before troubleshooting and testing a low-voltage or  
27 medium-voltage circuit contained in a compartment with a high-  
28 voltage circuit, the high-voltage circuit must be de-energized,  
29 disconnected, grounded, locked out and tagged in accordance with  
30 subsection (b).

(f) Conveyor belt structures.--Prior to the installation or removal of a conveyor belt structure, high-voltage cables extending from the section power center to the longwall equipment and located in the belt entries shall be:

(1) deenergized; or

(2) guarded in accordance with section 338, at the location where the belt structure is being installed or removed.

Section 344. Testing, examination and maintenance of longwall equipment.

(a) Equipment subject to seven-day inspection schedule.--At least once every seven days, a MSHA-qualified person shall test and examine each unit of high-voltage longwall equipment and circuits to determine that electrical protection, equipment grounding, permissibility cable insulation and control devices are being properly maintained to prevent fire, electrical shock, ignition or operational hazards from existing on the equipment. Tests shall include activating the ground-fault test circuit.

(b) Equipment subject to 30-day inspection schedule.--Each ground-wire monitor and associated circuits shall be examined and tested at least once every 30 days to verify proper operation and to verify that it will cause the corresponding circuit-interrupting device to open.

(c) Removal or repair of equipment.--When examinations or tests of equipment reveal a fire, electrical shock, ignition or operational hazard, the equipment must be removed from service immediately or repaired immediately.

(d) Certifications and records.--At the completion of examinations and tests required by this section, the person who makes the examinations and tests shall certify by signature and

1 date that they have been conducted. A record shall be made of  
2 any unsafe condition found and any corrective action taken.  
3 Certifications and records shall be kept for at least one year  
4 and shall be made available for inspection by authorized  
5 representatives of the department and representatives of miners.

6 Section 345. (Reserved).

7 Section 346. (Reserved).

8 Section 347. (Reserved).

9 Section 348. (Reserved).

10 Section 349. (Reserved).

11 Section 350. Equipment approvals.

12 (a) Departmental discretion.--The department may require the  
13 approval of all underground equipment, surface substations  
14 feeding power underground, fans and personnel conveyances  
15 (elevators, man hoists and escape capsules) connected to an  
16 underground mine. All elevators at the time of installation  
17 shall meet the criteria established in the current American  
18 Society of Mechanical Engineers A17.1 Code, pertaining to  
19 special application elevators, mine elevators, connected to an  
20 underground mine. The equipment shall be grouped as follows for  
21 the purposes of approval:

22 (1) Bituminous face equipment (BFE) - permissible  
23 equipment.

24 (2) Bituminous open type equipment (BOTE) - non-  
25 permissible equipment.

26 (3) Bituminous power distribution equipment (BPDE) -  
27 nonpermissible power equipment.

28 (4) Surface installations:

29 (i) Mine power substations (MM-S).

30 (ii) Fans I (MM-F).



1 (iii) Personnel conveyances (MM-P).

2 (5) Minewide monitoring systems (MWMS).

3 (b) Limitation of approvals.--The approvals under subsection  
4 (a) are specifically limited by the provision that permissible  
5 equipment approved by the MSHA Approval and Certification Center  
6 that is not in conflict with and which meets the requirements of  
7 this act shall be deemed to be approved by the department.

8 (c) Procedures for approval.--The procedures for approval of  
9 underground and surface equipment are as follows:

10 (1) Approvals shall be limited to electrical systems,  
11 safety systems required by this act and specifications  
12 developed by the task force established by the parties and  
13 provided for under subsection (d).

14 (2) Newly purchased permissible equipment shall be  
15 constructed in a fashion as to provide accessibility for  
16 inspection of permissible components.

17 (3) The evaluation to determine whether the equipment  
18 should be approved shall be based strictly on the specific  
19 criteria set forth in this act and the performance  
20 specifications under subsection (d). In the absence of  
21 performance specifications for equipment or specific  
22 provisions of this act addressing such equipment; and if the  
23 department considers that the equipment as designed or built  
24 poses an unacceptable risk to the health or safety of miners,  
25 the following procedure shall be applied:

26 (i) The department, in a written report, shall  
27 specify the unacceptable risk, based upon objective  
28 ascertainable data and criteria approved by a nationally  
29 recognized standards organization.

30 (ii) The department shall convene a task force to

1 develop specifications for the equipment in an expedited  
2 fashion.

3 (iii) If the task force is unable to develop  
4 applicable performance standards within 75 days, the  
5 department may continue to withhold approval based upon  
6 noncompliance with a mandatory safety standard of a  
7 nationally recognized standards organization that has  
8 been shown to be appropriate for mining.

9 (4) For new equipment, the prototype of which has not  
10 been previously approved, a manufacturer or operator shall  
11 submit to the department an application requesting approval.  
12 The request for approval shall include four schematics, a  
13 description and any other pertinent information for the  
14 equipment.

15 (5) The application under paragraph (4) shall be  
16 reviewed within 15 working days after receipt. Within the 45-  
17 day period the department shall communicate verbally and in  
18 writing to the applicant all discrepancies between the  
19 application and the equipment performance specifications. If  
20 the department does not communicate to the applicant within  
21 the 15 days as described in this paragraph, the application  
22 shall be deemed approved. If the applicant submits additional  
23 schematics or information, the department shall have an  
24 additional 15 days to communicate to the applicant concerning  
25 such additional schematics or information.

26 (6) When the application review under paragraph (5) is  
27 complete, an inspector shall be assigned to evaluate the  
28 equipment and the operator or manufacturer notified of that  
29 assignment. The equipment inspection shall be scheduled  
30 within 20 working days of the departmental inspector being

1 notified. If the inspector gets to the inspection site and  
2 the equipment is not in conformance with the specific  
3 criteria set forth in this act and the performance  
4 specifications described in this section, the time frame  
5 shall stop. When the equipment has been modified to conform  
6 with the specific criteria set forth in this act and the  
7 performance specifications, the operator shall notify the  
8 department for a reinspection, and the department shall  
9 schedule the reinspection within ten working days. If the  
10 equipment is in conformance with the specific criteria set  
11 out in this act and the performance specifications described  
12 in this section, but the schematics are not, the equipment  
13 can be used, but the operator or manufacturer shall have ten  
14 working days to resubmit the corrected schematics or the  
15 equipment shall be taken out of service.

16 (7) For previously approved equipment that an operator  
17 proposes to modify, the approval procedure established for  
18 new equipment that has not been previously approved is to be  
19 applicable. The approval process shall address only the  
20 modification that has been made and shall not require changes  
21 to the components of the equipment that were initially  
22 approved. For the purpose of this paragraph, modification  
23 shall not include changes to equipment in which components  
24 are changed and replaced with components that provide  
25 equivalent protection. Modifications subject to approval  
26 shall include only those changes to equipment which affect  
27 whether the equipment still satisfies the applicable  
28 performance specifications described in this section or set  
29 out specifically in this act.

30 (8) Approved equipment and repaired equipment that has

1 not been modified are outside the scope of the approval  
2 process and shall be handled under the mine inspection  
3 program of the department.

4 (9) Any direction to take corrective action shall be in  
5 writing and shall specify the provisions of this act or the  
6 performance specifications upon which the department relies.

7 (10) The department has the right to inspect equipment  
8 to determine that it is in compliance with applicable  
9 requirements of this act and the equipment performance  
10 specifications. The inspections shall be performed in the  
11 normal course of inspecting the mine and shall, to the extent  
12 feasible, minimize the disruption of production.

13 (11) New or rebuilt equipment that has been approved,  
14 but has not been inspected by an approval inspector, shall be  
15 inspected by a mine electrical inspector. The operator shall  
16 give reasonable notice to the mine electrical inspector for  
17 an inspection prior to the equipment entering the mine. The  
18 inspection shall be performed in the normal course of  
19 inspecting the mine and shall, to the extent feasible,  
20 minimize the disruption of production.

21 (d) Written criteria for equipment performance  
22 specifications.--A task force shall be established to develop  
23 written criteria for equipment performance specifications.

24 (1) The task force shall be comprised of equal numbers  
25 of representatives, not less than two nor more than four,  
26 selected by the department and the major trade association  
27 representing coal operators in this Commonwealth. Final  
28 consensus on performance specifications shall be determined  
29 by a majority of the task force.

30 (2) The task force shall develop performance

1 specifications for approval of equipment and reserves the  
2 right, for just cause, to add or delete from the developed  
3 equipment performance specifications.

4 (3) All equipment performance specifications approved  
5 pursuant to the stipulation of settlement shall remain in  
6 effect unless and until they are modified, suspended or  
7 revoked by this act, regulations promulgated under this act  
8 or the equipment performance specifications task force.

9 (e) Definitions.--As used in this section, the following  
10 words and phrases shall have the meanings given to them in this  
11 subsection:

12 "Permissible equipment." As applied to electric face  
13 equipment, all electrically operated equipment taken into or  
14 used in or by the last open crosscut of an entry or a room of  
15 any coal mine the electrical parts of which equipment,  
16 including, but not limited to, associated electrical equipment,  
17 components and accessories, are designed, constructed and  
18 installed in accordance with the specifications of MSHA to  
19 assure that the equipment will not cause a mine explosion or  
20 mine fire, and the other features of which are designed and  
21 constructed, in accordance with the specifications of the  
22 Secretary of Environmental Protection, to prevent, to the  
23 greatest extent possible, other accidents in the use of the  
24 equipment.

#### 25 CHAPTER 4

#### 26 DIESEL-POWERED EQUIPMENT

27 Section 401. Underground use.

28 (a) General rule.--Underground use of inby and outby diesel-  
29 powered equipment, including mobile equipment, stationary  
30 equipment and equipment of all horsepower ratings, shall only be

1 approved, operated and maintained as provided under this  
2 chapter, except for emergency fire-fighting equipment to be used  
3 specifically for that purpose.

4 (b) Required attendant.--All diesel-powered equipment shall  
5 be attended while in operation with the engine running in  
6 underground mines. For purposes of this subsection, "attended"  
7 shall mean an equipment operator is within sight or sound of the  
8 diesel-powered equipment.

9 (c) Required certifications or approvals.--Inby and outby  
10 diesel-powered equipment may be used in underground mines if the  
11 inby or outby diesel-powered equipment uses an engine approved  
12 or certified by MSHA, as applicable, for inby or outby use that,  
13 when tested at the maximum fuel-air ratio, does not require a  
14 MSHA Part 7 approval plate ventilation rate exceeding 75 c.f.m.  
15 per rated horsepower. If MSHA promulgates new regulations that  
16 change the MSHA Part 7 approval plate ventilation rate, the  
17 c.f.m. requirement per rated horsepower shall be revised either  
18 up or down on a direct ratio basis upon recommendation of the  
19 technical advisory committee in accordance with section 424.  
20 Section 402. Diesel-powered equipment package.

21 (a) Approval.--All diesel-powered equipment shall be  
22 approved by the secretary as a complete diesel-powered equipment  
23 package which shall be subject to all of the requirements,  
24 standards and procedures set forth under this chapter.

25 (b) Diesel engine approval.--Diesel engines shall be  
26 certified or approved, as applicable, by MSHA and maintained in  
27 accordance with MSHA certification or approval and secretary  
28 approval.

29 Section 403. Exhaust emissions control.

30 (a) Exhaust emissions control systems.--

1           (1) Except as provided in paragraph (3), underground  
2 diesel-powered equipment shall include an exhaust emissions  
3 control and conditioning system that has been laboratory  
4 tested with the diesel engine using the ISO 8178-1 test and  
5 has resulted in diesel particulate matter emissions that do  
6 not exceed an average concentration of 0.12 mg/m<sup>3</sup> when  
7 diluted by 100% of the MSHA Part 7 approval plate ventilation  
8 rate for that diesel engine. If MSHA promulgates new  
9 regulations that change the MSHA Part 7 approval plate  
10 ventilation rate, the dilution percentage relative to the  
11 approval plate ventilation rate shall be adjusted either up  
12 or down on a direct ratio basis upon recommendation of the  
13 technical advisory committee in accordance with section 424.

14           (2) Except as provided in paragraph (3), the exhaust  
15 emissions control and conditioning system shall be required  
16 to successfully complete a single series of laboratory tests  
17 for each diesel engine, conducted at a laboratory accepted by  
18 the secretary.

19           (3) An exhaust emissions control and conditioning system  
20 may be approved for multiple diesel engine applications  
21 through a single series of laboratory tests, known as the ISO  
22 8178-1 test, only if data is provided to the technical  
23 advisory committee that reliably verifies that the exhaust  
24 emissions control and conditioning system meets, for each  
25 diesel engine, the in-laboratory diesel particulate matter  
26 standard established by this subsection. Data provided to  
27 satisfy this paragraph shall include diesel particulate  
28 matter production rates for the specified engine as measured  
29 during the ISO 8178-1 test, if available. If ISO 8178-1 test  
30 data for diesel particulate matter production is not

1 available for a specified engine, comparable data may be  
2 provided to the technical advisory committee that reliably  
3 verifies that the exhaust emissions control and conditioning  
4 system shall meet, for the specified diesel engine, the in-  
5 laboratory diesel particulate matter standard established by  
6 this subsection. This standard shall only be used for in-  
7 laboratory testing for approval of diesel-powered equipment  
8 for use underground.

9 (b) Components of exhaust emissions system.--The exhaust  
10 emissions control and conditioning system shall include the  
11 following:

12 (1) A diesel particulate matter (DPM) filter that has  
13 proven capable of a reduction in total diesel particulate  
14 matter to a level that does not exceed the requirements of  
15 subsection (a)(1). However, the technical advisory committee  
16 may evaluate, in accordance with section 424, alternative  
17 technologies that have the ability to meet the 0.12 mg/m<sup>3</sup>  
18 standard.

19 (2) An oxidation catalyst or other gaseous emissions  
20 control device capable of reducing undiluted carbon monoxide  
21 emissions to 100 ppm or less under all conditions of  
22 operation at normal engine operating temperature range.

23 (3) An engine surface temperature control capable of  
24 maintaining significant external surface temperatures below  
25 302 degrees Fahrenheit.

26 (4) A system capable of reducing the exhaust gas  
27 temperature below 302 degrees Fahrenheit.

28 (5) An automatic engine shutdown system that shuts off  
29 the engine before the exhaust gas temperature reaches 302  
30 degrees Fahrenheit and, if water-jacketed components are



1 used, before the engine coolant temperature reaches 212  
2 degrees Fahrenheit. A warning shall be provided to alert the  
3 equipment operator prior to engine shutdown.

4 (6) A spark arrestor system.

5 (7) A flame arrestor system.

6 (8) A sampling port for measurement of undiluted and  
7 untreated exhaust gases as they leave the engine.

8 (9) A sampling port for measurement of treated undiluted  
9 exhaust gases before they enter the mine atmosphere.

10 (10) For permissible diesel equipment, any additional  
11 MSHA regulations must be met.

12 (c) Diagnostics systems.--Onboard engine performance and  
13 maintenance diagnostics systems shall be capable of continuously  
14 monitoring and giving readouts for paragraphs (1), (2), (3),  
15 (4), (5), (6), (7) and (8). The diagnostics system shall  
16 identify levels that exceed the engine or component  
17 manufacturer's recommendation or the applicable MSHA or bureau  
18 requirements as to the following:

19 (1) Engine speed.

20 (2) Operating hour meter.

21 (3) Total intake restriction.

22 (4) Total exhaust back pressure.

23 (5) Cooled exhaust gas temperature.

24 (6) Coolant temperature.

25 (7) Engine oil pressure.

26 (8) Engine oil temperature.

27 Section 404. Ventilation.

28 (a) Minimum quantities.--Minimum quantities of ventilating  
29 air where diesel-powered equipment is operated shall be  
30 maintained pursuant to this section.

1 (b) Approvals.--Each specific model of diesel-powered  
2 equipment shall be approved by the secretary before it is taken  
3 underground. The secretary shall require that an approval plate  
4 be attached to each piece of the diesel-powered equipment. The  
5 approval plate shall specify the minimum ventilating air  
6 quantity for the specific piece of diesel-powered equipment. The  
7 minimum ventilating air quantity shall be determined by the  
8 bureau based on the amount of air necessary at all times to  
9 maintain the exhaust emissions at levels not exceeding the  
10 exposure limits established under section 419.

11 (c) (Reserved).

12 (d) Multiple units in operation.--Where multiple units are  
13 operated, the minimum quantity shall be at least the total of  
14 100% of MSHA's Part 7 approval plate ventilation rate for each  
15 unit operating in that split. Air quantity measurements to  
16 determine compliance with this requirement shall be made at the  
17 most downwind unit of diesel-powered equipment that is being  
18 operated in that air split. If MSHA promulgates new regulations  
19 that change the MSHA Part 7 approval plate ventilation rate, the  
20 minimum quantity where multiple units are operated shall be  
21 revised on a direct ratio basis upon recommendation of the  
22 technical advisory committee in accordance with section 424.

23 (e) Minimum quantities of air in certain splits.--The  
24 minimum quantities of air in any split where any diesel-powered  
25 equipment is operated shall be in accordance with the minimum  
26 air quantities required in subsections (a) and (b) and shall be  
27 specified in the mine diesel ventilation plan.

28 Section 405. Fuel storage facilities.

29 (a) General rule.--An underground diesel fuel storage  
30 facility shall be any facility designed and constructed to

1 provide for the storage of any mobile diesel fuel transportation  
2 units or the dispensing of diesel fuel.

3 (b) Diesel fuel standards.--Diesel-powered equipment shall  
4 be used underground only with fuel that meets the standards of  
5 the most recently approved United States Environmental  
6 Protection Agency (EPA) guidelines for over-the-road fuel.  
7 Additionally, the fuel shall also meet the ASTM D975 standards  
8 with a flash point of 100 degrees Fahrenheit or greater at  
9 standard temperature and pressure. The operator shall maintain a  
10 copy of the most recent delivery receipt from the supplier to  
11 verify that the fuel used underground meets this standard.

12 (c) Requirements.--Underground diesel fuel storage  
13 facilities shall meet the following general requirements:

14 (1) Fixed underground diesel fuel storage tanks are  
15 prohibited.

16 (2) No more than 500 gallons of diesel fuel shall be  
17 stored in each underground diesel fuel storage facility.

18 (d) Location.--Underground diesel fuel storage facilities  
19 shall be located as follows:

20 (1) at least 100 feet from shafts, slopes, shops and  
21 explosives magazines;

22 (2) at least 25 feet from trolley wires, haulage ways,  
23 power cables and electric equipment not necessary for the  
24 operation of the storage facilities; and

25 (3) in an area that is as dry as practicable.

26 (e) Construction requirements.--

27 (1) Underground diesel fuel storage facilities shall  
28 meet the construction requirements and safety precautions  
29 under this subsection.

30 (2) Underground diesel fuel storage facilities shall

1 meet all of the following:

2 (i) Be constructed of noncombustible materials and  
3 provided with either self-closing or automatic closing  
4 doors.

5 (ii) Be ventilated directly into the return air  
6 course using noncombustible materials.

7 (iii) Be equipped with an automatic fire suppression  
8 system complying with section 408. The technical advisory  
9 committee may recommend for approval an alternate method  
10 of complying with this section on a mine-by-mine basis in  
11 accordance with section 424.

12 (iv) Be equipped with at least two portable 20-pound  
13 multipurpose dry-chemical type fire extinguishers.

14 (v) Be marked with conspicuous signs designating  
15 combustible liquid storage.

16 (vi) Be included in the preshift examination.

17 (3) Welding or cutting other than that performed in  
18 accordance with paragraph (4) shall not be done within 50  
19 feet of a diesel fuel storage facility.

20 (4) When it is necessary to weld, cut or solder  
21 pipelines, cylinders, tanks or containers that may have  
22 contained diesel fuel, the following requirements shall  
23 apply:

24 (i) Cutting or welding shall not be performed on or  
25 within containers or tanks that have contained  
26 combustible or flammable materials until the containers  
27 or tanks have been thoroughly purged and cleaned or  
28 rendered inert and a vent or opening is provided to allow  
29 for sufficient release of any buildup pressure before  
30 heat is applied.

1           (ii) Diesel fuel shall not be allowed to enter  
2           pipelines or containers that have been welded, soldered,  
3           brazed or cut until the metal has cooled to ambient  
4           temperature.

5 Section 406. Transfer of diesel fuel.

6       (a) General rule.--Diesel fuel shall be transferred as  
7 provided in this section.

8       (b) Pump transfers.--When diesel fuel is transferred by  
9 means of a pump and a hose equipped with a nozzle containing a  
10 self-closing valve, a powered pump may be used only if:

11           (1) the hose is equipped with a nozzle containing a  
12 self-closing valve without a latch-open device; and

13           (2) the pump is equipped with an accessible emergency  
14 shutoff switch.

15       (c) Compressed gas prohibition.--Diesel fuel shall not be  
16 transferred using compressed gas.

17       (d) Status of diesel engine.--Diesel fuel shall not be  
18 transferred to the fuel tank of diesel-powered equipment while  
19 the equipment's engine is running.

20       (e) Dry-system design.--Diesel fuel piping systems shall be  
21 designed and operated as dry systems.

22       (f) Standards for pipes, valves and fittings.--All piping,  
23 valves and fittings shall meet the following requirements:

24           (1) Be capable of withstanding working pressures and  
25 stresses.

26           (2) Be capable of withstanding four times the static  
27 pressures.

28           (3) Be compatible with diesel fuel.

29           (4) Be maintained in a manner that prevents leakage.

30       (g) Manual shutoff valves.--Vertical pipelines shall have

1 manual shutoff valves installed at the surface filling point and  
2 at the underground discharge point.

3 (h) Exposed fuel pipelines.--Unburied diesel fuel pipelines  
4 shall not exceed 300 feet in length and shall have shutoff  
5 valves located at each end of the unburied pipeline.

6 (i) Horizontal pipeline prohibition.--Horizontal pipelines  
7 shall not be used to distribute fuel throughout a mine.

8 (j) Limitation on piping systems.--Diesel fuel piping  
9 systems shall be used only to transport fuel from the surface  
10 directly to a single underground diesel fuel transfer point.

11 (k) Restrictions related to boreholes.--When boreholes are  
12 used, the diesel fuel piping system shall not be located in a  
13 borehole with electric power cables.

14 (l) Inspections.--Diesel fuel pipelines located in any shaft  
15 shall be included as part of the required examination of the  
16 shaft.

17 (m) Location in entries.--Diesel fuel piping systems located  
18 in entries shall not be located on the same side of the entry as  
19 electric cables or power lines.

20 (n) Trolley-haulage limitations.--Diesel fuel pipelines  
21 shall not be located in any trolley-haulage entry, except that  
22 they may cross the entry perpendicular if buried or otherwise  
23 protected from damage and sealed.

24 (o) Protection.--Diesel fuel piping systems shall be  
25 protected to prevent physical damage.

26 Section 407. Containers.

27 (a) General rule.--Containers for the transport of diesel  
28 fuel shall meet the requirements of this section.

29 (b) Limitations on containers.--Diesel fuel shall be  
30 transported only in containers specifically designed for the

1 transport of diesel fuel.

2 (c) Limitations on vehicle transport.--No more than one  
3 safety can, conspicuously marked, shall be transported on a  
4 vehicle at any time.

5 (d) Standards for containers other than safety containers.--  
6 Containers, other than safety cans, used to transport diesel  
7 fuel shall be provided with the following:

8 (1) Devices for venting.

9 (2) Self-closing caps.

10 (3) Vent pipes at least as large as the fill or  
11 withdrawal connection, whichever is larger, but not less than  
12 one and one-fourth inch nominal inside diameter.

13 (4) Liquid-tight connections for all container openings  
14 that are identified by conspicuous markings and closed when  
15 not in use.

16 (5) Shutoff valves located within one inch of the tank  
17 shell on each connection through which liquid can normally  
18 flow.

19 (e) Tanks with manual gauging.--When tanks are provided with  
20 openings for manual gauging, liquid-tight caps or covers shall  
21 be provided and shall be kept closed when not open for gauging.

22 (f) Capacity of containers.--Containers used for the  
23 transport of diesel fuel shall not exceed a capacity of 500  
24 gallons.

25 (g) Certain containers as permanent fixtures.--Containers,  
26 other than safety cans, used for the transport of diesel fuel  
27 shall be permanently fixed to the transportation unit.

28 (h) Method of transportation.--Diesel fuel transportation  
29 units shall be transported individually and not with any other  
30 cars, except that two diesel fuel transportation units up to a

1 maximum of 500 gallons each may be transported together.

2 (i) Prohibition.--Diesel fuel shall not be transported on  
3 conveyor belts.

4 (j) Fire extinguisher.--When transporting diesel fuel in  
5 containers other than safety cans, a fire extinguisher shall be  
6 provided on each end of the transportation unit. The fire  
7 extinguishers shall be multipurpose type dry-chemical fire  
8 extinguishers containing a nominal weight of 20 pounds.

9 (k) Fire suppression systems for diesel transportation  
10 units.--Diesel fuel transportation units shall have a fire  
11 suppression system that meets the requirements of section 408.

12 (l) Limitations where trolley wires are present.--In mines  
13 where trolley wire is used, diesel fuel transportation units  
14 shall be provided with insulating material to protect the units  
15 from any energized trolley wire, and the distance between the  
16 diesel fuel transportation unit and the trolley wire shall not  
17 be less than 12 inches, or the trolley wire shall be de-  
18 energized when diesel fuel transportation units are transported  
19 through the area.

20 (m) Parking restrictions.--Unattended diesel fuel  
21 transportation units shall be parked only in underground diesel  
22 fuel storage facilities.

23 (n) Emergency fueling restrictions.--Safety cans shall be  
24 used for emergency fueling only.

25 (o) Standards for safety cans.--Safety cans shall be clearly  
26 marked, have a maximum capacity of five gallons, be constructed  
27 of metal and be equipped with a nozzle and self-closing valves.  
28 Section 408. Fire suppression for equipment and transportation.

29 (a) General rule.--Fire suppression systems for diesel-  
30 powered equipment and fuel transportation units shall meet the



1 requirements of this section.

2 (b) Type system.--The system must be an automatic  
3 multipurpose dry-powder type fire suppression system suitable  
4 for the intended application and listed or approved by a  
5 nationally recognized independent testing laboratory.

6 Installation requirements shall be as follows:

7 (1) The system shall be installed in accordance with the  
8 manufacturer's specifications and the limitations of the  
9 listing or approval.

10 (2) The system shall be installed in a protected  
11 location or guarded to minimize physical damage from routine  
12 operations.

13 (3) Suppressant agent distribution tubing or piping of  
14 the system shall be secured and protected against damage,  
15 including pinching, crimping, stretching, abrasion and  
16 corrosion.

17 (4) Discharge nozzles of the system shall be positioned  
18 and aimed for maximum fire suppression effectiveness in the  
19 protected areas. Nozzles shall also be protected against the  
20 entrance of foreign materials, such as mud, coal dust or rock  
21 dust that could prevent proper discharge of suppressant  
22 agent.

23 (c) Automatic fire detection and suppression.--The fire  
24 suppression system shall provide automatic fire detection and  
25 suppression for all of the following:

26 (1) The engine, transmission, hydraulic pumps and tanks,  
27 fuel tanks, exposed brake units, air compressors and battery  
28 areas, as applicable, on all diesel-powered equipment.

29 (2) Fuel containers and electric panels or controls used  
30 during fuel transfer operations on fuel transportation units.

1 (d) Fault and fire alarm annunciators.--The fire suppression  
2 system shall include a system fault and fire alarm annunciator  
3 that can be seen and heard by the equipment operator.

4 (e) Automatic engine shutdown.--The fire suppression system  
5 shall provide for automatic engine shutdown. Engine shutdown and  
6 discharge of suppressant agent may be delayed for a maximum of  
7 15 seconds after the fire alarm annunciator alerts the operator.

8 (f) Manual actuators.--At least two manual actuators shall  
9 be provided, with at least one manual actuator at each end of  
10 the equipment. If the equipment is provided with an operator's  
11 compartment, one of the mechanical actuators shall be located in  
12 the compartment within easy reach of the operator. For  
13 stationary equipment, the two manual actuators shall be located  
14 with at least one actuator on the stationary equipment and at  
15 least one actuator a safe distance away from the equipment and  
16 in intake air.

17 Section 409. Fire suppression for storage areas.

18 (a) General rule.--Fire suppression systems for diesel fuel  
19 storage areas shall meet the requirements of this section.

20 (b) Type system.--The system shall be an automatic  
21 multipurpose dry-powder type fire suppression system or other  
22 system of equal capability, suitable for the intended  
23 application and listed or approved by a nationally recognized  
24 independent testing laboratory. The system shall meet the  
25 following installation requirements:

26 (1) The system shall be installed in accordance with the  
27 manufacturer's specifications and the limitations of the  
28 listing or approval.

29 (2) The system shall be installed in a protected  
30 location or guarded to minimize physical damage from routine

1 operations.

2 (3) Suppressant agent distribution tubing or piping of  
3 the system shall be secured and protected against damage,  
4 including pinching, crimping, stretching, abrasion and  
5 corrosion.

6 (4) Discharge nozzles of the system shall be positioned  
7 and aimed for maximum fire suppression effectiveness in the  
8 protected areas. Nozzles shall also be protected against the  
9 entrance of foreign materials, such as mud, coal dust and  
10 rock dust that could prevent proper discharge of suppressant  
11 agent.

12 (c) Automatic fire detection and suppression.--The fire  
13 suppressant system shall provide automatic fire detection and  
14 suppression for the fuel storage tanks, containers, safety cans,  
15 pumps, electrical panels and control equipment in fuel storage  
16 areas.

17 (d) Types of alarms.--Audible and visual alarms to warn of  
18 fire or system faults shall be provided at the protected area  
19 and at a surface location that is always staffed when persons  
20 are underground. A means shall also be provided for warning all  
21 endangered persons in the event of fire.

22 (e) Manual actuators.--Fire suppression systems shall  
23 include two manual actuators with at least one located within  
24 the fuel storage facility and at least one located a safe  
25 distance away from the storage facility and in intake air.

26 (f) System operation.--The fire suppression system shall  
27 remain operative in the event of electrical system failure.

28 (g) Monitoring of certain systems.--If electrically  
29 operated, the detection and actuation circuits shall be  
30 monitored and provided with status indicators showing power and

1 circuit continuity. If not electrically operated, a means shall  
2 be provided to indicate the functional readiness status of the  
3 system.

4 (h) Weekly visual inspection.--Fire suppression devices  
5 shall be visually inspected at least once each week by a person  
6 qualified to make the inspection.

7 (i) Maintenance, testing and records.--Each fire suppression  
8 device shall be tested and maintained. A record shall be  
9 maintained of the inspection required by this subsection. The  
10 record of the weekly inspections shall be maintained at an  
11 appropriate location for each fire suppression device.

12 (j) (Reserved).

13 (k) Instructions.--All miners normally assigned to the  
14 active workings of a mine shall be instructed about any hazards  
15 inherent to the operation of all fire suppression devices  
16 installed and, where appropriate, the safeguards available for  
17 each device.

18 Section 410. Use of certain starting aids prohibited.

19 The use of volatile or chemical starting aids is prohibited.

20 Section 411. Fueling.

21 (a) Restrictions on fueling locations.--Fueling of diesel-  
22 powered equipment shall not be conducted in the intake escape-  
23 way unless the mine design and entry configuration make it  
24 necessary. In those cases where fueling in the intake escape-way  
25 is necessary, the mine operator shall submit a plan for approval  
26 to the secretary, which shall be investigated by the technical  
27 advisory committee in accordance with section 402, outlining the  
28 special safety precautions that will be taken to insure the  
29 protection of miners. The submitted plan shall specify a  
30 location, such as the end of the tail piece track or adjacent to

1 the load out point, where fueling shall be conducted in the  
2 intake escape-way and all other safety precautions that shall be  
3 taken, which shall include an examination of the area for  
4 spillage or fire by a qualified person.

5 (b) Spill cleanup.--Diesel fuel and other combustible  
6 materials shall be cleaned up and not be permitted to accumulate  
7 anywhere in an underground mine or on diesel-powered or electric  
8 equipment located in a mine.

9 (c) Trained person on duty.--At least one person specially  
10 trained in the cleanup and disposal of diesel fuel spills shall  
11 be on duty at the mine when diesel-powered equipment or mobile  
12 fuel transportation equipment is being used or when any fueling  
13 of diesel-powered equipment is being conducted.

14 Section 412. Fire and safety training.

15 (a) Training of underground employees.--All underground  
16 employees at the mine shall receive special instruction related  
17 to fighting fires involving diesel fuel. This training may be  
18 included in annual refresher training under MSHA regulations at  
19 30 CFR Part 48 (relating to training and retraining of miners)  
20 or included in the fire drills required under MSHA regulations  
21 relating to program of instruction; location and use of fire  
22 fighting equipment; location of escape-ways, exits and routes of  
23 travel; evacuation procedures; and fire drills.

24 (b) Training of miners.--All miners shall be trained in  
25 precautions for safe and healthful handling and disposal of  
26 diesel-powered equipment filters. All used intake air filters,  
27 exhaust diesel particulate matter filters and engine oil filters  
28 shall be placed in their original containers or other suitable  
29 enclosed containers and removed from the underground mine to the  
30 surface. Arrangements shall be made for safe handling and

1 disposal of these filters within a timely manner after they have  
2 reached the surface.

3 Section 413. Maintenance.

4 (a) General rule.--Diesel-powered equipment shall be  
5 maintained in an approved and safe condition as described in  
6 this chapter or removed from service. Failure of the mine  
7 operator to comply with the maintenance requirements of this  
8 subsection may result in revocation of the secretary's approval  
9 of the complete diesel-powered equipment package, provided  
10 appropriate notification has been given to the mine operator and  
11 the procedures of this section have been followed. Upon  
12 receiving the appropriate notification, the mine operator shall  
13 have 30 days to submit a plan to achieve and maintain  
14 compliance. The plan shall be evaluated by the secretary and,  
15 upon approval, the mine operator shall implement the plan. The  
16 secretary shall monitor the mine operator's compliance. If the  
17 secretary then determines that the mine operator is unable or  
18 unwilling to comply, the secretary shall revoke the mine  
19 operator's approval.

20 (b) Acquisition and maintenance of approvals.--To acquire  
21 and maintain approval of a complete diesel-powered equipment  
22 package, the mine operator shall comply with the following  
23 requirements:

24 (1) All service, maintenance and repairs of approved  
25 complete diesel-powered equipment packages shall be performed  
26 by mechanics who are trained and qualified in accordance with  
27 section 422.

28 (2) Service and maintenance of approved complete diesel-  
29 powered equipment packages shall be performed according to:

30 (i) the specified routine maintenance schedule;

- 1           (ii) onboard performance and maintenance diagnostics
- 2       readings;
- 3           (iii) emissions test results; and
- 4           (iv) component manufacturers' recommendations.

5 Section 414. Records.

6       (a) General rule.--A record shall be made of all emissions  
7 tests, preoperational examinations and maintenance and repairs  
8 of complete diesel-powered equipment packages. The records made  
9 pursuant to this section shall meet the requirements of this  
10 section.

11       (b) Written certification.--The person performing the  
12 emissions test, examination, maintenance or repair shall certify  
13 by date, time, engine hour reading and signature that the  
14 emissions test, examination, maintenance or repair was made.

15       (c) Results.--Records of emissions tests and examinations  
16 shall include the specific results of such tests and  
17 examinations.

18       (d) Content.--Records of maintenance and repairs shall  
19 include the work that was performed, any fluids or oil added,  
20 parts replaced or adjustments made and the results of any  
21 subsequently required emissions testing.

22       (e) Preoperational examination record retention.--Records of  
23 preoperational examinations shall be retained for the previous  
24 100-hour maintenance cycle.

25       (f) Certain records to be countersigned.--Records of  
26 emissions tests, 100-hour maintenance tests and repairs shall be  
27 countersigned once each week by the certified mine electrician  
28 or mine foreman.

29       (g) Other record retention.--Except as specified in  
30 subsection (e), all records required by this section shall be

1 retained for at least one year at a surface location at the mine  
2 and made available for inspection by the department and by  
3 miners and their representatives.

4 Section 415. Duties of equipment operator.

5 (a) Preoperational examination.--Prior to use of a piece of  
6 diesel-powered equipment during a shift, an equipment operator  
7 shall conduct an examination as follows:

8 (1) Check the exhaust emissions control and conditioning  
9 system components to determine that the components are in  
10 place and not damaged or leaking.

11 (2) Assure that the equipment is clean and free of  
12 accumulations of combustibles.

13 (3) Assure that the machine is loaded safely.

14 (4) Check for external physical damage.

15 (5) Check for loose or missing connections.

16 (6) Check engine oil level.

17 (7) Check transmission oil level.

18 (8) Check other fluid levels, if applicable.

19 (9) Check for hydraulic, coolant and oil leaks.

20 (10) Check fan, water pump and other belts.

21 (11) Check the fan for damage.

22 (12) Check guards.

23 (13) Check the fuel level.

24 (14) Check for fuel leaks.

25 (15) Comply with recordkeeping requirements pursuant to  
26 section 414.

27 (b) Operational examination.--After the engine is started  
28 and warmed up, the equipment operator shall conduct an  
29 examination as follows:

30 (1) Check all onboard engine performance and maintenance



1 diagnostics system gauges for proper operation and in-range  
2 readings. The equipment operator shall immediately shut down  
3 the engine and notify the operator if the onboard readings  
4 indicate any of the following:

5 (i) Intake restriction at full engine speed is  
6 greater than the manufacturer's recommendation.

7 (ii) Exhaust restriction at full engine speed is  
8 greater than the manufacturer's recommendation.

9 (iii) Coolant temperature is at or near 212 degrees  
10 Fahrenheit.

11 (iv) Low engine oil pressure.

12 (v) High engine oil temperature.

13 (2) Check safety features, including, but not limited  
14 to, the throttle, brakes, steering, lights and horn.

15 (3) Comply with recordkeeping requirements pursuant to  
16 section 414.

17 Section 416. Schedule of maintenance.

18 At intervals not exceeding 100 hours of engine operation, a  
19 qualified mechanic shall perform the following maintenance and  
20 make all necessary adjustments or repairs or remove the  
21 equipment from service:

22 (1) Wash or steam clean the equipment.

23 (2) Check for and remove any accumulations of coal, coal  
24 dust or other combustible materials.

25 (3) Check the equipment for damaged or missing  
26 components or other visible defects.

27 (4) Conduct electrical and safety component inspections.

28 (5) Replace engine oil and oil filter.

29 (6) Check the transmission oil level and add oil, if  
30 necessary.

1           (7) Check hydraulic oil level and add oil, if necessary.

2           (8) Check the engine coolant level and add coolant, if  
3 necessary.

4           (9) Check all other fluid levels and add fluid, if  
5 necessary.

6           (10) Check for oil, coolant and other fluid leaks.

7           (11) Inspect the cooling fan, radiator and shroud.

8 Remove any obstructions and make necessary repairs.

9           (12) Check all belts. Tighten or replace, if necessary.

10          (13) Check the battery and service as necessary.

11          (14) Check the automatic fire suppression system.

12          (15) Check the portable fire extinguisher.

13          (16) Check the lights.

14          (17) Check the warning devices.

15          (18) With the engine operating, check and replace or  
16 repair the following:

17           (i) Oil pressure.

18           (ii) Intake air restriction at full engine speed.

19           (iii) Exhaust gas restriction at full engine speed.

20           (iv) Exhaust flame arrestor.

21           (v) All gauges and controls.

22          (19) Conduct repeatable loaded engine-operating test in  
23 accordance with section 418.

24          (20) If the equipment is approved with a nondisposable  
25 diesel particulate filter, a smoke dot test of the filtered  
26 exhaust must be performed at this time. The results of the  
27 smoke dot test shall be recorded on the 100-hour emissions  
28 form. If the interpreted smoke dot number is greater than  
29 three, the technical advisory committee shall be notified and  
30 shall investigate to determine if the filter is functioning

1 properly.

2 (21) Evaluate and interpret the results of all of the  
3 above tests and examinations and make all necessary repairs  
4 or remove the equipment from service.

5 (22) Comply with the recordkeeping requirements pursuant  
6 to section 414.

7 Section 417. Emissions monitoring and control.

8 (a) General rule.--Emissions for diesel-powered equipment  
9 shall be monitored and controlled as provided in this section.

10 (b) Determination of baseline emission values.--When any  
11 diesel-powered equipment first enters service at a mine,  
12 baseline emission values shall be determined by a qualified  
13 mechanic. Unless the technical advisory committee in accordance  
14 with section 424 recommends an alternate procedure, the  
15 qualified mechanic shall:

16 (1) Verify that the seal on the engine fuel injector is  
17 in place and that the proper fuel pump is on the equipment.

18 (2) Install a new clean intake air cleaner, measure and  
19 record the intake restriction pressure.

20 (3) Check the level of engine oil.

21 (4) Change the engine lubrication oil if not fresh.

22 (5) Check the level of the transmission fluid.

23 (6) Measure and record the exhaust backpressure. If  
24 exhaust gas back pressure is above that recommended by the  
25 manufacturer, steps must be taken to bring the exhaust gas  
26 back pressure within the manufacturer's recommended limit  
27 prior to beginning the test described in this subsection.

28 (7) Test the brakes.

29 (8) Place the equipment into an intake entry.

30 (9) Set the brakes and chock the wheels.

1           (10) Install an exhaust gas analyzer into the untreated  
2 exhaust gas port.

3           (11) Start the engine and allow it to warm up to  
4 operating temperature.

5           (12) Put the engine into a loaded condition. For this  
6 section, the loaded condition for the baseline emissions  
7 testing shall be determined by the technical advisory  
8 committee by determining CO<sub>2</sub> values that are representative  
9 of the MSHA lug curve readings for that engine model and  
10 horsepower.

11          (13) Start the exhaust gas analyzer and allow the engine  
12 to operate in the loaded condition for a sufficient length of  
13 time not less than a 90-second duration to insure proper CO  
14 readings. The qualified mechanic shall record both CO and CO<sub>2</sub>  
15 readings. Note: Baseline CO values shall be determined by the  
16 technical advisory committee based upon MSHA lug curve  
17 readings for that engine model and horsepower. If the  
18 baseline CO values are greater than the MSHA lug curve  
19 values, the technical advisory committee shall investigate  
20 and either recommend approval or disapproval or recommend  
21 alternate methods of meeting the requirements of this  
22 section.

23          (14) Comply with recordkeeping requirements pursuant to  
24 section 414.

25          (15) An alternative to the testing provided in  
26 paragraphs (1) through (14) may be developed by the technical  
27 advisory committee in accordance with section 424.

28          (16) Emissions test procedures for this section shall be  
29 submitted to the technical advisory committee in accordance  
30 with section 424 prior to being implemented for each engine

1 and equipment type.

2 Section 418. Diagnostic testing.

3 (a) Tests.--At intervals not exceeding once every 100 hours  
4 of engine operation, a qualified mechanic shall perform  
5 equipment maintenance diagnostic testing of each piece of  
6 diesel-powered equipment in the mine. The qualified mechanic  
7 shall do all of the following:

8 (1) Verify the identification numbers on the equipment.

9 (2) Check the level of the engine lubricating oil.

10 (3) Check the level of the transmission fluid.

11 (4) Set the brakes and chock the wheels.

12 (5) Install the portable carbon monoxide sampling device  
13 into the untreated exhaust port coupling provided in the  
14 operator's cab.

15 (6) Start the engine and allow it to warm up to  
16 operating temperature.

17 (7) Check the intake restriction and the exhaust back  
18 pressure at high idle speed.

19 (8) If the intake restriction is more than the  
20 manufacturer's maximum recommended intake restriction,  
21 replace the intake filter with a clean one.

22 (9) If exhaust gas back pressure is above that  
23 recommended by the manufacturer, take steps to bring the  
24 exhaust gas back pressure within the manufacturer's  
25 recommended limit prior to beginning the test described in  
26 this section.

27 (10) Put the engine into a loaded condition. As used in  
28 this paragraph, the term loaded condition shall mean a  
29 condition in which the carbon dioxide values are  
30 representative of the MSHA lug curve values for that engine

1 model and horsepower rating.

2 (11) Take the following steps:

3 (i) Start the exhaust gas analyzer.

4 (ii) Allow the engine to operate for a sufficient  
5 time, not less than 90 seconds, to insure proper carbon  
6 monoxide readings and record both carbon monoxide and  
7 carbon dioxide readings.

8 (12) Install the exhaust gas analyzer into the treated  
9 exhaust port and repeat steps set forth in paragraphs (10)  
10 and (11).

11 (13) If the average carbon monoxide reading for  
12 untreated exhaust gas is greater than twice the baseline  
13 established under section 417(b) or if the average carbon  
14 monoxide reading for treated exhaust gas is greater than 100  
15 pounds per minute, the equipment has failed and shall be  
16 serviced and retested before it is returned to regular  
17 service.

18 (14) Comply with recordkeeping requirements under  
19 section 414.

20 (b) Procedures.--Emissions test procedures for this section  
21 must be submitted to the technical advisory committee under  
22 section 424 prior to being implemented for each engine and  
23 equipment type.

24 (c) Alternative procedure.--An alternative to the testing  
25 provided in subsection (a) may be developed by the technical  
26 advisory committee under section 424.

27 Section 419. Exhaust gas monitoring and control.

28 (a) Concentration.--In monitoring and controlling exhaust  
29 gases, the ambient concentration of exhaust gases in the mine  
30 atmosphere shall not exceed 35 parts per million for carbon

1 monoxide and three pounds per minute for nitrogen dioxide. The  
2 concentration of these exhaust gases shall be measured at the  
3 equipment operator's or equipment attendant's position and by  
4 the last piece of diesel-powered equipment operating in the same  
5 split of air. Measurements shall be made weekly or more often if  
6 necessary by a qualified person and shall be conducted under the  
7 requirements of this section.

8 (b) Measurement.--Measurement of exhaust gases shall be made  
9 with a sampling instrument no less precise than detector tubes.

10 (c) Changes.--If the concentration of a gas listed in  
11 subsection (a) is at least 75% of its exposure limit, changes to  
12 the use of the diesel equipment, the mine ventilation or the  
13 mining process shall be made.

14 (d) Excessive exposure.--If the concentration of a gas  
15 listed in subsection (a) exceeds the exposure limit, the diesel  
16 equipment operating in that split shall be removed from service  
17 immediately, and corrective action shall be taken. After  
18 corrective action has been taken by the mine operator, the  
19 diesel equipment may be returned to service in its regular  
20 operating mode for emissions testing purposes only; and  
21 emissions testing shall be conducted immediately to assure that  
22 the concentration does not exceed 75% of the exposure limit.  
23 Corrective action shall be taken until the concentration does  
24 not exceed 75% of the exposure limit before the diesel equipment  
25 can be returned to full operation.

26 (e) Compliance.--The mine operator shall comply with the  
27 following requirements:

28 (1) Repair or adjustment of the fuel injection system  
29 shall only be performed by qualified mechanics authorized by  
30 the engine manufacturer.

(2) Complete testing of the emissions system in accordance with section 418 shall be conducted:

(i) prior to any piece of diesel-powered equipment being put into service; and

(ii) after any repair or adjustment to the fuel delivery system, engine timing or exhaust emissions control and conditioning system.

(3) Service and maintenance of the intake air filter, exhaust particulate filter and the exhaust system shall be performed at specific time intervals based on the component manufacturer's recommendation and compliance with the engine or emissions control operation specifications and, as needed, based on the on-board diagnostics or emissions test results. Accurate records shall be maintained of service and maintenance under this paragraph.

Section 420. Training and general requirements.

(a) Approval.--Training course instructors and training plans required by this section shall be approved by the secretary. Operator training and qualification shall meet the requirements of this section.

(b) Conduct.--

(1) Training shall be conducted in the basics of the operation of a diesel engine, Federal and State regulations governing their use, company rules for safe operation, specific features of each piece of equipment and the ability to recognize problems.

(2) Training shall be provided to each equipment operator and the mine health and safety committee if one exists. This training shall be designed to bring every operator to a level of good understanding of diesel equipment



1 operation.

2 (3) Each operator shall be qualified by attending a  
3 minimum eight-hour course, including classroom training on  
4 diesel fundamentals and equipment-specific hands-on training  
5 on the job. Training shall include instruction in the  
6 following classroom subjects:

7 (i) Engine fundamentals. This subparagraph includes  
8 an introduction to the function of a diesel engine and  
9 recognition of major components and their functions.

10 (ii) Diesel regulations. This subparagraph includes  
11 an introduction to Federal and State regulations  
12 governing the use of diesel equipment.

13 (iii) Diesel emissions. This subparagraph includes  
14 an introduction to diesel emissions and their adverse  
15 health effects.

16 (iv) Factors which affect diesel emissions. This  
17 subparagraph includes a detailed presentation of engine  
18 faults and diesel fuel quality, their effect on emissions  
19 and the preventive actions which can be taken to minimize  
20 emissions levels.

21 (v) Emissions control devices. This subparagraph  
22 includes a detailed presentation of the different  
23 emissions control devices employed to reduce emissions  
24 and details about actions the operator must take to keep  
25 the devices in working order.

26 (vi) Diagnostic techniques. This subparagraph  
27 includes a presentation of techniques which can be  
28 employed by the operator to assure the equipment is in  
29 safe operating condition and instruction about how to  
30 recognize and diagnose certain engine faults which may

1           cause increases in emissions.

2           (vii) Preoperational inspection. This subparagraph  
3 includes a presentation of the purpose, benefits and  
4 requirements of the preoperational inspection.

5           (viii) Ventilation. This subparagraph includes an  
6 introduction to special ventilation requirements for  
7 areas where diesel-powered equipment will operate.

8           (ix) Fire suppression system. This subparagraph  
9 includes an introduction to the fire suppression system  
10 and its function and when and how to activate the fire  
11 suppression manually.

12           (x) Operating rules. This subparagraph includes a  
13 detailed presentation of the driving rules, safe driving  
14 speeds, traffic control devices and equipment  
15 limitations.

16           (xi) Emergency procedures. This subparagraph  
17 includes discussion of:

18               (A) emergencies, such as fire, diesel fuel  
19 spills, component failure, loss of ventilation air  
20 and emergency escape procedures; and

21               (B) potential use of the diesel-powered vehicle  
22 as an emergency escape vehicle in case of a mine  
23 emergency.

24           (xii) Recordkeeping and reporting procedures. This  
25 subparagraph includes a presentation on required  
26 recordkeeping and reporting procedures for problems or  
27 unsafe conditions, high emissions levels and  
28 preoperational inspections made by the equipment  
29 operator.

30       (c) Certificate.--Upon successful completion of both

1 training sessions, the operator shall be issued a certificate of  
2 qualification which qualifies the operator to operate a specific  
3 type of diesel-powered equipment. An operator may be qualified  
4 to operate more than one type of equipment by completing  
5 additional equipment-specific training covering differences  
6 specific to each additional type of equipment.

7 (d) Refresher training.--Refresher training, separate from  
8 that required by MSHA regulations at 30 CFR Pt. 48 (relating to  
9 the training and retraining of miners), shall be required  
10 annually.

11 (e) Annual certificate.--A new certificate of qualification  
12 shall be issued annually after the equipment operator has  
13 received the annual refresher training.

#### 14 Section 421. Equipment-specific training.

15 (a) Approval.--Training course instructors and training  
16 plans required by this section must be approved by the  
17 secretary.

18 (b) Description.--

19 (1) Equipment-specific hands-on orientation training  
20 shall be given in an area of the mine where the equipment  
21 will be operated. This orientation shall be specific to the  
22 type and make of the diesel machine and shall be presented in  
23 small groups.

24 (2) The following subjects shall be included in the  
25 training:

26 (i) Equipment layout. This subparagraph includes  
27 familiarization with the layout of the equipment, the  
28 operator's compartments and the controls.

29 (ii) Preoperation inspection. This subparagraph  
30 includes familiarization with the preoperation inspection

1 procedure and review of specific details of the  
2 inspection and location of the components to be  
3 inspected.

4 (iii) Equipment limitations. This subparagraph  
5 includes instruction relating to equipment performance,  
6 speeds, capacities and blind areas.

7 (iv) Operating areas. This subparagraph includes  
8 instruction relating to areas in which the equipment may  
9 be operated.

10 (v) Operation. This subparagraph includes  
11 familiarization with the controls, gauges and warning  
12 devices and safe operating limits of all indicating  
13 gauges.

14 (vi) Refueling procedure. This subparagraph includes  
15 familiarization with fuel handling, permissible refueling  
16 areas, spill prevention, cleanup and potential hazards  
17 from diesel fuel.

18 (vii) Emergency devices. This subparagraph includes  
19 instruction relating to the location and use of the fire  
20 extinguisher and fire suppression devices.

21 (viii) Driving practice. This paragraph includes  
22 supervised operation of the equipment.

23 Section 422. Diesel mechanic training.

24 (a) Approval.--Training course instructors and training  
25 plans required by this section must be approved by the  
26 secretary.

27 (b) General rule.--Diesel mechanic training and  
28 qualification shall meet the requirements of this section.

29 (c) Skills.--Diesel mechanics shall be trained and qualified  
30 to perform maintenance, repairs and testing of the features of

1 diesel equipment certified by MSHA and the secretary.

2 (d) Qualification.--To be qualified, a diesel mechanic shall  
3 successfully complete a minimum of 16 hours of a training  
4 program approved by the secretary regarding the general  
5 function, operation, maintenance and testing of emissions  
6 control and conditioning components. The diesel mechanic shall  
7 be qualified to perform these tasks on the specific machines  
8 used at the mine or mines where they are employed. Additional  
9 engine-specific training shall be provided to diesel mechanics  
10 in accordance with a plan approved by the secretary.

11 (e) Retraining.--Annual retraining programs for diesel  
12 mechanics shall be required and shall be approved by the  
13 secretary. Retraining shall include refresher training as well  
14 as new procedure and new technology training as necessary.  
15 Retraining shall be separate from refresher training pursuant to  
16 MSHA regulations at 30 CFR Pt. 48 (relating to training and  
17 retraining of miners) and electrical training required by MSHA.

18 (f) Programs.--The minimum diesel mechanic training programs  
19 shall include training in the following minimum subject  
20 requirements:

21 (1) Federal and State requirements regulating the use of  
22 diesel equipment.

23 (2) Company policies and rules related to the use of  
24 diesel equipment.

25 (3) Emissions control system design and component  
26 technical training.

27 (4) Onboard engine performance and maintenance  
28 diagnostics system design and component technical training.

29 (5) Service and maintenance procedures and requirements  
30 for the emissions control systems.

(6) Emissions testing procedures and evaluation and interpretation of test results.

(7) Troubleshooting procedures for the emissions control systems.

(8) Fire protection systems test and maintenance.

(9) Fire and ignition sources and their control and elimination.

(10) Fuel system maintenance and safe fueling procedures.

(11) Intake air system design and components technical training and maintenance procedures.

(12) Engine shutdown device tests and maintenance.

(13) Special instructions regarding components, such as the fuel injection system, which may only be repaired and adjusted by a qualified mechanic who has received special training and is authorized to make the repairs or adjustments by the component manufacturer.

(14) Instruction on recordkeeping requirements for maintenance procedures and emissions testing.

(15) Other subjects determined by the secretary to be necessary to address specific health and safety needs.

#### Section 423. Operation of diesel-powered equipment.

(a) General rule.--In addition to other requirements of this chapter, diesel-powered equipment shall be operated pursuant to the standards set forth in this section.

(b) Attended equipment.--Diesel-powered equipment shall be attended while in operation with the engine running in underground mines.

(c) Idling.--Unnecessary idling of diesel-powered equipment is prohibited.

1 (d) Access.--Roadways where diesel-powered equipment is  
2 operated shall be maintained as free as practicable from bottom  
3 irregularities debris and wet or muddy conditions, which affect  
4 control of the equipment.

5 (e) Speed.--Operating speeds shall be consistent with  
6 conditions of roadways, grades, clearances, visibility and  
7 traffic and type of equipment used.

8 (f) Control.--Equipment operators shall have full control of  
9 the mobile equipment while it is in motion.

10 (g) Traffic rules.--Traffic rules, including speed, signals  
11 and warning signs, shall be standardized at each mine and  
12 posted.

13 (h) Maintenance.--

14 (1) Diesel-powered equipment shall be maintained in a  
15 safe operating condition which does not threaten health of  
16 human beings.

17 (2) Diesel-powered equipment not maintained in  
18 accordance with paragraph (1) or not maintained in accordance  
19 with the engine or emissions control operating specifications  
20 shall be removed from service immediately and shall not be  
21 returned to service until all necessary corrective actions  
22 have been taken.

23 Section 424. Technical advisory committee.

24 (a) Establishment.--The Technical Advisory Committee on  
25 Diesel-Powered Equipment is established.

26 (b) Membership.--The advisory committee shall consist of two  
27 members, who shall be residents of this Commonwealth.

28 (1) The Governor shall appoint one member to represent  
29 the viewpoint of the coal operators in this Commonwealth  
30 within 30 days from receipt of a list containing one or more

1 nominees submitted by the major trade association  
2 representing coal operators in this Commonwealth.

3 (2) The Governor shall appoint one member to represent  
4 the viewpoint of the working miners in this Commonwealth  
5 within 30 days from receipt of a list containing one or more  
6 nominees submitted by the highest ranking official within the  
7 major employee organization representing coal miners in this  
8 Commonwealth.

9 (c) Terms.--Each member of the technical advisory committee  
10 shall be appointed for a term of three years. If renominated and  
11 reappointed, a member may serve an unlimited number of  
12 successive three-year terms.

13 (d) Functions.--The technical advisory committee has the  
14 following functions:

15 (1) Advising the secretary regarding implementation of  
16 this chapter.

17 (2) Evaluating alternative technology or methods for  
18 meeting the requirements for diesel-powered equipment as set  
19 forth in this chapter.

20 (3) Providing technical assistance to operators  
21 regarding diesel equipment technologies.

22 (4) Conducting investigations relating to implementation  
23 of this chapter.

24 (5) Providing training regarding diesel equipment  
25 emission controls and emission testing.

26 (e) Compensation.--Members of the technical advisory  
27 committee shall be compensated at the appropriate per diem rate  
28 based on the prevailing formula administered by the  
29 Commonwealth, but not less than \$150 per day, plus all  
30 reasonable expenses incurred while performing their official



1 duties. Compensation shall be adjusted annually by the secretary  
2 to account for inflation based on the rate of inflation  
3 identified by the Consumer Price Index for All Urban Consumers,  
4 Bureau of Labor Statistics. The individual member may waive his  
5 right to all or part of the compensation set forth in this  
6 provision.

7 (f) Meetings.--The technical advisory committee shall meet  
8 at least twice during each calendar year.

9 (g) Quorum.--Actions of the technical advisory committee  
10 require the participation of both members.

11 (h) Support.--

12 (1) The department shall make clerical support and  
13 assistance available to enable the technical advisory  
14 committee to carry out its duties. Upon the request of both  
15 members of the technical advisory committee, the secretary  
16 may draft proposed conditions of use and reports or perform  
17 investigations.

18 (2) The department shall purchase for the technical  
19 advisory committee equipment for testing diesel engine  
20 exhaust emissions and measuring diesel engine surface  
21 temperatures and exhaust gas temperatures. Alternative  
22 technology or methods recommended by the technical advisory  
23 committee or approved by the secretary shall not reduce or  
24 compromise the level of health and safety protection afforded  
25 by this chapter.

26 (i) Alternative technologies.--

27 (1) Upon application of a coal miner, coal mine operator  
28 or diesel-related technology manufacturer, or on its own  
29 motion, the technical advisory committee shall consider  
30 requests for the use of alternative diesel-related health and

1 safety technologies with general underground mining industry  
2 application which are consistent with this chapter. The  
3 following apply:

4 (i) Upon receipt of an application, the technical  
5 advisory committee shall conduct an investigation, which  
6 shall include consultation with a representative of the  
7 major trade association representing coal operators in  
8 this Commonwealth and with a representative of the major  
9 employee organization representing coal miners in this  
10 Commonwealth.

11 (ii) Approval of an application made under this  
12 subsection shall make the alternative technology or  
13 method available for use by a coal mine operator in this  
14 Commonwealth but shall not be construed to require that a  
15 coal mine operator use the approved alternative  
16 technology or method.

17 (2) Upon application of a coal mine operator, the  
18 technical advisory committee shall consider site-specific  
19 requests for use of alternative diesel-related health and  
20 safety technologies. The committee's recommendations on  
21 applications submitted under this subsection shall be on a  
22 mine-by-mine basis. Upon receipt of a site-specific  
23 application, the technical advisory committee shall conduct  
24 an investigation, which shall include consultation with the  
25 mine operator and the authorized representatives of the  
26 miners at the mine. Authorized representatives of the miners  
27 shall include a mine health and safety committee elected by  
28 miners at the mine and an individual employed by an employee  
29 organization representing miners at the mine or an individual  
30 authorized as the representative of miners of the mine in

1 accordance with MSHA regulations at 30 CFR Pt. 40 (relating  
2 to representative of miners). If there is no authorized  
3 representative of the miners, the technical advisory  
4 committee shall consult with a reasonable number of miners at  
5 the mine.

6 (3) Within 180 days of receipt of an application for use  
7 of alternative technologies or methods, the technical  
8 advisory committee shall complete its investigation and make  
9 a recommendation to the secretary. The technical advisory  
10 committee members shall only recommend approval of an  
11 application if, at the conclusion of the investigation, the  
12 committee members have made a determination that the use of  
13 the alternative technology or method will not reduce or  
14 compromise the level of health and safety protection afforded  
15 by this chapter. The time period under this paragraph may be  
16 extended with the consent of the applicant.

17 (4) The technical advisory committee shall forward to  
18 the secretary three possible recommendations:

19 (i) A unanimous recommendation to approve the  
20 application for use of alternative technologies or  
21 methods. A recommendation under this subparagraph must be  
22 made in writing and include the results of the  
23 investigation and specific conditions of use for the  
24 alternative technology or method.

25 (ii) A unanimous recommendation to reject the  
26 application for use of alternative technologies or  
27 methods. A recommendation under this subparagraph must be  
28 made in writing and outline in detail the basis for the  
29 rejection.

30 (iii) A divided recommendation in which one member

1 of the technical advisory committee recommends approval  
2 of the application for use of alternative technologies or  
3 methods and one member of the advisory committee  
4 recommends rejection of the application for use of  
5 alternative technologies or methods. For a recommendation  
6 under this subparagraph, each member of the committee  
7 must submit a detailed report to the secretary within 14  
8 days of the committee's vote outlining the member's  
9 position for or against the application.

10 (5) The secretary shall proceed as follows:

11 (i) Alternative technologies or methods may be  
12 approved by the secretary if they do not reduce or  
13 compromise the level of health and safety protection  
14 afforded by this chapter.

15 (ii) If a recommendation under paragraph (2)(i) or  
16 (ii) is forwarded to the secretary by the technical  
17 advisory committee, the secretary shall have 30 days in  
18 which to render a final decision adopting or rejecting  
19 the advisory committee's recommendation and the  
20 application.

21 (iii) The secretary may only approve or reject a  
22 recommendation under paragraph (2) without modification  
23 unless the modification is unanimously approved by the  
24 technical advisory committee.

25 (iv) If a recommendation under paragraph (2) is  
26 forwarded to the secretary, the secretary shall convene,  
27 within 30 days, a meeting with the members of the  
28 technical advisory committee to discuss the reasons for  
29 the divided recommendation and to determine whether  
30 additional information and further discussion might

1 result in a unanimous recommendation by the committee.

2 (v) The following apply:

3 (A) The secretary shall render a decision on the  
4 application within 30 days from the date of the  
5 meeting with the technical advisory committee or, if  
6 no meeting is convened, within 60 days of forwarding  
7 of the recommendation.

8 (B) Upon consent of the applicant, the time  
9 period under clause (A) may be extended.

10 (C) Except as set forth in clause (B), if the  
11 secretary does not comply with the time requirements  
12 to render a decision under this subparagraph, the  
13 technical advisory committee's recommendation shall  
14 be deemed rejected.

15 (6) Action taken by the secretary under this subsection  
16 is subject to 2 Pa.C.S. Ch. 7 Subch. A (relating to judicial  
17 review of Commonwealth agency action).

18 (j) Shaft and slope construction.--The secretary shall  
19 establish, based on recommendations made by the technical  
20 advisory committee, conditions of use for the use of diesel-  
21 powered equipment in shaft and slope construction operations at  
22 coal mines. Conditions of use proposed by the technical advisory  
23 committee shall be considered by the secretary and shall be  
24 adopted or rejected by the secretary without modification,  
25 except as approved by the technical advisory committee.

## 26 CHAPTER 5

### 27 ENFORCEMENT AND REMEDIES

28 Section 501. Enforcement orders and duty to comply.

29 (a) Authority.--

30 (1) The department may issue written orders to enforce

1       this act, to effectuate the purposes of this act and to  
2       protect the health and safety of miners and persons in and  
3       about mines.

4           (2) An order issued under this act shall take effect  
5       upon notice, unless the order specifies otherwise.

6           (3) An appeal to the Environmental Hearing Board shall  
7       not act as a supersedeas.

8       (b) Compliance.--It is the duty of any person to whom an  
9       order applies to comply with that order.

10   Section 502. Restraining violations.

11       (a) Department.--In addition to any other remedies provided  
12   by law, the department may seek an injunction to restrain any of  
13   the following:

14           (1) Violation of this act, a regulation promulgated  
15       under this act or any approval, standard, order or permit  
16       issued under this act.

17           (2) Creation and maintenance of a threat to the health  
18       and safety of miners and persons in and about mines.

19       (b) Court.--

20           (1) In a proceeding under subsection (a), the court may  
21       do any of the following:

22               (i) Issue an injunction if it finds reasonable cause  
23       to believe that the respondent is engaging in conduct  
24       which:

25                   (A) violates this act; a regulation promulgated  
26       under this act or any approval, standard or order  
27       issued under this act; or

28                   (B) poses a threat to the health and safety of  
29       miners and persons in and about mines.

30           (ii) Levy civil penalties against the respondent.

1           (2) The courts of common pleas and the Commonwealth  
2 courts are granted jurisdiction to hear and decide  
3 proceedings brought under subsection (a).

4       (c) Bond.--The department is be required to post bond in  
5 connection with proceedings brought under this section.

6 Section 503. Administrative penalties.

7       (a) Declaration of threat.--The following actions by mine  
8 officials are declared to pose an imminent and substantial  
9 threat to the health and safety of miners:

10           (1) Assigning an employee without training or proper  
11 certification.

12           (2) Requiring or condoning a violation of this act, a  
13 regulation promulgated under this act or any approval,  
14 standard or order issued under this act.

15           (3) Failing to perform a required examination.

16           (4) Failing to address promptly the dangers identified  
17 through a mine examination or inspection by the department.

18           (5) Supplying inaccurate information to the department.

19           (6) Failing to notify the department as required by this  
20 act.

21           (7) Failing to de-energize electrical power as required  
22 by this act.

23           (8) Failing to evacuate the mine when required to do so  
24 by a provision of this act.

25       (b) Penalty for mine officials and operator liability.--

26           (1) If the department finds that a mine official has  
27 engaged in any of the actions under subsection (a), the  
28 department may assess an administrative penalty of up to  
29 \$2,500 against the mine official. In every instance in which  
30 an administrative penalty is assessed against a mine

1 official, the department may assess the same administrative  
2 penalty against the operator of the mine where the violations  
3 occurred.

4 (2) If the department finds that the operator directed  
5 or condoned an unsafe act or a violation of the act:

6 (i) the department may assess an administrative  
7 penalty of not less than \$10,000 and not more than  
8 \$200,000 against the operator; and

9 (ii) the person that directed or condoned the action  
10 shall be removed from any position of command and  
11 control.

12 (c) Nonexclusive remedy.--Assessment of a penalty under this  
13 section does not preclude the department from exercising any  
14 other remedy available to it.

15 (d) Factors.--In determining the amount of a penalty, the  
16 department shall consider the following:

17 (1) The degree to which the conduct was reckless or  
18 intentional.

19 (2) Whether an individual was fatally or seriously  
20 injured.

21 (3) The potential for the violation resulting in death  
22 or serious injury to an individual.

23 (4) Whether the conduct is in violation of an  
24 outstanding order.

25 (5) In the case of an operator, the economic benefit to  
26 the operator from not complying with the applicable  
27 requirements.

28 (e) Practice and procedure.--A penalty under this section is  
29 subject to:

30 (1) 2 Pa.C.S. Chs. 5 Subch. A (relating to practice and



1 procedure of Commonwealth agencies) and 7 Subch. A (relating  
2 to judicial review of Commonwealth agency action); and  
3 (2) 25 Pa. Code Ch. 1021 (relating to practice and  
4 procedures).

5 Section 503.1. Process for assessing administrative penalties.

6 (a) Assessment process.--If the department assesses an  
7 administrative penalty, it shall inform the operator and mine  
8 official, as applicable, of the amount of the penalty. The  
9 person assessed with the penalty shall then have 30 days to pay  
10 the penalty in full or, if the person wishes to contest the  
11 amount of the penalty, the person shall, within the 30-day  
12 period, file an appeal of the department's assessment with the  
13 Environmental Hearing Board. Failure to appeal within 30 days  
14 shall result in a waiver of all legal rights to contest the  
15 amount of the penalty.

16 (b) Prepayment of administrative penalty.--If the operator  
17 or mine official wishes to contest either the amount of the  
18 penalty or the violation, the operator or mine official shall  
19 forward an amount not greater than \$25,000 to the department for  
20 placement in an escrow account with the State Treasurer or any  
21 bank located in this Commonwealth, or post an appeal bond in the  
22 amount of the proposed penalty provided that the bond shall be  
23 executed by a surety licensed to do business in this  
24 Commonwealth and is satisfactory to the department. If through  
25 administrative or judicial review of the penalty, it is  
26 determined that no violation occurred, or that the amount of the  
27 penalty should be reduced, the department shall within 30 days  
28 remit the appropriate amount to the operator or mine official,  
29 with any interest accumulated by the escrow deposit. Failure to  
30 forward the money or the appeal bond to the department within 30

1 days shall result in a waiver of all legal rights to contest the  
2 violation or the amount of the penalty.

3 (c) Payment of penalty.--The amount assessed after  
4 administrative hearing or waiver shall be payable to the  
5 Commonwealth of Pennsylvania, Mine Safety Fund and shall be  
6 collectible in any manner provided under law for the collection  
7 of debts. If any person liable to pay any penalty neglects or  
8 refuses to pay it after demand, the amount together with  
9 interest and any costs that may accrue, shall constitute a  
10 judgment in favor of the Commonwealth upon the property of the  
11 person from the date it has been entered and docketed or  
12 recorded by the prothonotary of the county where such property  
13 is situated. The department may, at any time, transmit to the  
14 prothonotaries of the respective counties certified copies of  
15 the judgments, and it shall be the duty of each prothonotary to  
16 enter and docket the judgments in the prothonotary's office, and  
17 to index it as judgments are indexed, without requiring the  
18 payment of costs as a condition precedent to the entry of the  
19 judgment.

20 Section 504. Unlawful conduct.

21 It is unlawful for a person to do any of the following:

22 (1) Violate this act, a regulation under this act or any  
23 approval, standard or order under this act.

24 (2) Cause or assist another in a violation under  
25 paragraph (1).

26 (3) Hinder or threaten an agent or employee of the  
27 department in the course of performance of a duty under this  
28 act, including entry and inspection.

29 (4) Do any of the following on mine property:

30 (i) Venture into areas with unsupported roof.

- 1           (ii) Fail to make required gas checks.
- 2           (iii) Work on energized equipment without de-
- 3 energizing, locking out and tagging that equipment.
- 4           (iv) Change approved equipment without obtaining the
- 5 department's approval.
- 6           (v) Circumvent a safety device.
- 7           (vi) Disable an alarm.
- 8           (vii) Possess or use alcohol, drugs or smoking
- 9 materials in an unlawful manner on mine property.
- 10           (viii) Assign an employee without adequate training
- 11 to perform the assigned work.
- 12           (ix) Require or condone a violation of this act, a
- 13 regulation under this act or any approval, standard or
- 14 order under this act.
- 15           (x) Require or condone performance of an unsafe act.
- 16           (xi) Fail to perform a proper and required
- 17 examination.
- 18           (xii) Fail to abate promptly the dangers identified
- 19 through a mine examination or inspection by the
- 20 department.
- 21           (xiii) Supply inaccurate information to the
- 22 department.
- 23           (xiv) Fail to:
- 24               (A) notify the department as required by this
- 25 act;
- 26               (B) de-energize electrical power as required by
- 27 this act; or
- 28               (C) evacuate the mine when required.

29 Section 505. Criminal penalties.

- 30       (a) Prohibition.--A person commits a felony of the second

1 degree if all of the following apply:

2 (1) The person:

3 (i) violates this act, a regulation under this act  
4 or any approval, standard or order under this act;

5 (ii) submits false information to the department; or

6 (iii) fails to notify the department as required by  
7 this act.

8 (2) The action or inaction under paragraph (1):

9 (i) either results in the death of or substantial  
10 bodily injury to an individual; or

11 (ii) creates a condition that poses a substantial  
12 likelihood of causing death or substantial bodily injury  
13 to an individual.

14 Section 506. Inspections.

15 (a) Administrative.--An agent or employee of the department  
16 may do any of the following:

17 (1) Inspect a mine, property, building, premises, place,  
18 book or record.

19 (2) Secure physical evidence. This paragraph includes  
20 photography and videography.

21 (3) Conduct tests. This paragraph includes taking  
22 samples.

23 (b) Warrant.--It shall be sufficient probable cause for a  
24 court of competent jurisdiction to issue a search warrant if the  
25 department establishes all of the following:

26 (1) The action under subsection (a) is pursuant to the  
27 department's general inspection of mines and investigations  
28 at mines.

29 (2) The agent or employee:

30 (i) has reason to believe that there has been a

violation of this act, a regulation under this act or any approval, standard or order under this act of the department has occurred or may occur; or

(ii) has been refused access or been prevented from taking action under subsection (a).

Section 507. Intervention.

A person having an interest, which is or may be adversely affected has the right without posting bond, to intervene in an action or appeal brought by the department before the Environmental Hearing Board under this act.

Section 508. Limitation of action.

(a) Civil and administrative.--Notwithstanding 42 Pa.C.S. Ch. 55 Subch. B (relating to civil actions and proceedings) or any other statutory provision to the contrary:

(1) A civil action under this act shall be commenced within three years from the date the cause of action arises.

(2) An administrative action under this act shall be commenced within three years from the date of the violation.

(b) Criminal.--Notwithstanding 42 Pa.C.S. Ch. 55 Subch. C (relating to criminal proceedings) or any other statutory provision to the contrary, a criminal action under this act shall be commenced within three years from the date the offense is committed.

Section 509. Relation to permit.

The following apply if the department finds that an operator has demonstrated a lack of intent or ability to comply with this act, a regulation under this act or any approval, standard or order under this act:

(1) The department may take any action it deems appropriate regarding the operator's permits, including

1 denial of applications for new, renewed or amended permits  
2 and suspension or revocation of existing permits.

3 (2) Before taking action under paragraph (1), the  
4 department shall provide the operator with an opportunity to  
5 demonstrate to the department the operator's intent and  
6 ability to comply.

7 Section 510. Certification actions.

8 (a) Denial.--The department shall not issue a certification  
9 if, after investigation and an opportunity for an informal  
10 hearing, it finds that the applicant lacks the ability or intent  
11 to comply with this act.

12 (b) Sanctions.--

13 (1) The department may modify, suspend or revoke a  
14 certification under this act if it determines that the holder  
15 has done any of the following:

16 (i) Failed to comply with this act; a regulation  
17 under this act or any approval, standard or order under  
18 this act.

19 (ii) Interfered with the safe and lawful operation  
20 of any mine.

21 (iii) Engaged in unlawful conduct under this act.

22 (2) An appeal to the Environmental Hearing Board shall  
23 be treated as a petition for a supersedeas.

24 (3) This subsection is subject to 2 Pa.C.S. Chs. 5  
25 Subch. A (relating to practice and procedure of Commonwealth  
26 agencies) and 7 Subch. A (relating to judicial review of  
27 Commonwealth agency action).

28 (c) Retesting.--A mine official whose certificate has been  
29 revoked shall have the right after five years of work experience  
30 in an underground bituminous coal mine, two years of which must

1 be in a working section, to be reexamined and upon receipt of a  
2 satisfactory score on the examination, the mine official shall  
3 be given another certificate of qualification.

4 (d) Other remedies.--This section is in addition to any  
5 other remedy afforded the department under this act or any other  
6 provision of law.

7 Section 511. Withdrawal of certification.

8 If a superintendent receives information that any mine  
9 foreman, assistant mine foreman, mine examiner or mine  
10 electrician neglects duties or is incapacitated, the  
11 superintendent shall make a thorough investigation. If the  
12 superintendent finds evidence to sustain neglect or incapacity,  
13 the superintendent shall suspend the individual and inform the  
14 department.

15 CHAPTER 6

16 EMERGENCY MEDICAL PERSONNEL

17 Section 601. Definitions.

18 The following words and phrases when used in this chapter  
19 shall have the meanings given to them in this section unless the  
20 context clearly indicates otherwise:

21 "Emergency medical technician." A coal mine employee who has  
22 successfully completed the course on emergency first aid care  
23 and transportation of the sick and injured recommended by the  
24 American Academy of Orthopedic Surgeons and who has been  
25 certified by the Department of Health to provide emergency care.

26 "Emergency medical technician paramedic." A person who has  
27 been certified by the Department of Health to provide emergency  
28 medical treatment.

29 Section 602. Emergency medical personnel.

30 (a) Requirement.--Emergency medical personnel shall be

employed at every mine as follows:

(1) At least one emergency medical technician shall be on duty at any time when miners at that mine are engaged in the extraction, production or preparation of coal. Emergency medical technicians shall be on duty at a mine in sufficient numbers to assure that no miner shall work in a mine location which cannot be reached in 30 minutes by an emergency medical technician. Emergency medical technicians shall be employed at their regular duties at locations convenient for quick response to emergencies and shall have available to them at all times necessary equipment in compliance with Federal regulations.

(2) Telephone services or the equivalent facilities shall be installed which shall provide two-way voice communications between the emergency medical technician at the mine and medical personnel outside or away from the mine who provide emergency medical services on a regular basis.

(3) Operators shall make adequate provisions so that at least one emergency medical technician paramedic, registered nurse, physician or physician assistant is available to provide care at a mine at any time that persons are engaged in extraction, production or preparation of coal. Emergency medical personnel under this paragraph shall be on call to reach the entrance of the mine within 30 minutes.

Section 603. Regulations for training and certification.

The Department of Health shall promulgate regulations to train and certify emergency medical technicians and emergency medical technician paramedics.

Section 604. First aid training of mine employees.

Each operator shall provide every new employee who has not



1 received first aid training required by the department within  
2 the six months prior to the date of employment with the training  
3 required by the department. The department shall consult with  
4 the Department of Health, MSHA and representatives of miners and  
5 representatives of operators in determining the training to be  
6 required under this section. Each mine employee shall be  
7 provided with five hours of refresher first aid training within  
8 each 24-month period of employment. Each employee shall be paid  
9 regular wages or overtime pay, if applicable, for all periods of  
10 first aid training.

11 Section 605. Continuing training.

12 The department, after consultation with the Department of  
13 Health regarding the content of instruction courses, shall  
14 provide for necessary training on a continuing basis of  
15 emergency medical technicians and emergency medical technician  
16 paramedics in sufficient numbers to satisfy the requirements of  
17 this chapter.

18 Section 606. Regulations.

19 The Environmental Quality Board, after consultation with the  
20 Department of Health and the Board of Coal Mine Safety shall  
21 promulgate regulations to implement the operational provisions  
22 of this chapter.

23 Section 607. Certification.

24 The Department of Health shall promulgate regulations to  
25 prescribe procedures necessary to certify emergency medical  
26 technicians and emergency medical technician paramedics and  
27 consult with the department as may be required under this  
28 chapter.

29 Section 608. Liability.

30 (a) Physicians.--

1           (1) Except as set forth in paragraph (2), a physician  
2       who in good faith gives instructions to a certified emergency  
3       medical technician or emergency medical technician paramedic,  
4       a registered nurse or physician assistant shall not be liable  
5       for civil damages as a result of issuing the instructions.

6           (2) Paragraph (1) does not apply to an intentional or  
7       grossly negligent tort.

8       (b) Other medical personnel.--

9           (1) Except as set forth in paragraph (2), a certified  
10      emergency medical technician, emergency medical technician  
11      paramedic, registered nurse or physician assistant who in  
12      good faith attempts to render emergency care to a sick or  
13      injured individual in or about a mine shall not be liable for  
14      civil damages as a result of any acts or omissions.

15          (2) Paragraph (1) does not apply to an intentional or  
16      grossly negligent tort.

17   Section 609. Equivalent training.

18       If the department determines that an operator is presently  
19      providing emergency medical care for its employees which is  
20      equivalent to or superior to the emergency medical care provided  
21      for under this chapter, the department shall make a finding that  
22      the operator is in compliance with this chapter.

## 23                                   CHAPTER 7

### 24                   SAFETY ZONES AND ENTOMBED WORKMEN

25   Section 701. Establishment.

26       A safety zone is established beneath and adjacent to every  
27      stream, river and natural or artificial body of water in this  
28      Commonwealth that is sufficiently large to constitute a hazard  
29      to mining in the opinion and discretion of the department. In  
30      the case of a stream or river, the safety zone shall extend

1 horizontally 200 feet from the high-water mark of each bank. In  
2 the case of any other body of water sufficiently large to, in  
3 the department's discretion, constitute a hazard to mining, the  
4 safety zone shall extend horizontally 200 feet from the known  
5 perimeter. Each safety zone shall extend downward to the limit  
6 of the workable beds.

7 Section 702. Written authorization.

8 (a) Requirement.--No mining or removal of minerals shall be  
9 permitted within the safety zone unless authorization is  
10 specifically granted in advance and in writing by the  
11 department.

12 (b) Procedure.--Authorization shall only be granted upon  
13 application of the operator. Application shall be accompanied by  
14 four copies of a plan of the proposed mining operation. The plan  
15 shall indicate the thickness of the unconsolidated strata, the  
16 thickness of the rock strata and coal beds overlying the bed to  
17 be mined, the thickness of the bed, the width of the mine  
18 openings, the width of the pillars to be left and any other  
19 special features that may be deemed necessary as affecting the  
20 contemplated first mining.

21 (c) Examinations.--The department shall make periodic  
22 examinations to determine the accuracy of plans, maps and  
23 drawings submitted to it under the provisions of this section.

24 Section 703. Pillar recovery.

25 Pillar recovery may not be undertaken until the pillars are  
26 approved by the department. Applications for pillar recovery  
27 must be accompanied by four copies of a plan, which must include  
28 such information as shall be determined by the department. The  
29 approval or disapproval of the plan shall be based on the  
30 factors of depth, the thickness of the bed, the percentage of

pillars proposed to be extracted and to be left, the effect on pillars remaining in overlying beds and any other special features deemed necessary by the department.

Section 704. Proof of rock cover.

(a) Requirement.--Proof of the existence of 35 feet of rock cover must accompany any plan submitted under this chapter.

(b) Sufficiency.--Proof of rock cover is to be ascertained by testing holes drilled on:

(1) intersecting lines forming rectangles or squares where the cover thickness is less than 50 feet; and

(2) on spacing of not more than 35-foot centers.

Section 705. Verification.

Plans and proof of rock cover under this chapter must be signed by a registered professional mining engineer representing the operator and a registered professional mining engineer representing the lessor or the owner.

Section 706. Approval or disapproval of plans.

(a) Approval.--If, after review, the department approves the plan, it shall send copies of the approved plan to the registered professional mining engineer representing the operator and to the registered professional mining engineer representing the lessor or the owner.

(b) Disapproval.--If, after review, the department disapproves the plan, it shall send copies of the disapproval, identifying its reasons for that action, to the registered professional mining engineer representing the operator and a registered professional mining engineer representing the lessor or the owner.

Section 707. Notice.

After approval of the plan by the department, mining or

1 removal of minerals shall not begin within the safety zone until  
2 the mine foreman has conspicuously posted a notice on the  
3 outside of the mine and has orally notified each miner affected  
4 that the miner is working within the safety zone.

5 Section 708. Entombed workmen.

6 If a workman is enclosed, entombed or buried in any coal mine  
7 in this Commonwealth, the department, upon request of a  
8 relative of the workman or the department, shall petition a  
9 court of competent jurisdiction to order recovery of the body  
10 and to make a decree that the workman is dead.

## 11 CHAPTER 31

### 12 MISCELLANEOUS PROVISIONS

13 Section 3101. Repeals.

14 (a) Absolute.--

15 (1) The General Assembly declares that the repeals under  
16 paragraph (2) are necessary to effectuate this act.

17 (2) The following acts and parts of acts are repealed  
18 absolutely:

19 (i) The act of June 30, 1947 (P.L.1177, No.490),  
20 known as The Coal Mine Sealing Act of 1947.

21 (ii) The act of July 17, 1961 (P.L.659, No.339),  
22 known as the Pennsylvania Bituminous Coal Mine Act.

23 (iii) The act of July 9, 1976 (P.L.931, No.178),  
24 referred to as the Coal Mine Emergency Medical Personnel  
25 Law.

26 (b) Inconsistent.--The following acts and parts of acts are  
27 repealed to the extent they apply to bituminous coal mines:

28 (1) The act of May 9, 1889 (P.L.154, No.171), entitled  
29 "An act to provide for the recovery of the bodies of workmen  
30 enclosed, buried or entombed in coal mines."

1           (2) The act of June 3, 1943 (P.L.848, No.357), entitled  
2        "An act providing that every mine foreman, assistant mine  
3        foreman and fire boss, under the Bituminous Mining Laws and  
4        the Anthracite Mining Laws of the Commonwealth, represents  
5        and is an officer of the Commonwealth in the mine in which  
6        employed, for the suspension or cancellation of the  
7        certificates of such officials as shall hold same, and for  
8        the disqualification of such as are uncertificated by the  
9        Secretary of Mines after or prior to hearing, for failure or  
10       refusal to perform his respective duties; defining the  
11       procedure in such hearing and the powers of the Secretary of  
12       Mines, with respect thereto, and providing for a review of  
13       his decisions by courts of common pleas and the Superior  
14       Court; providing for re-examination by the examining board of  
15       any person whose certificate has been cancelled, and for  
16       reinstatement of such as are uncertificated; and prohibiting  
17       the employment by any operator in such capacity of any mine  
18       foreman, assistant mine foreman or fire boss not possessing  
19       the requisite certificate or whose certificate is suspended  
20       or who has been disqualified."

21       (3) The act of December 22, 1959 (P.L.1994, No.729),  
22       entitled "An act prohibiting mining in certain areas without  
23       prior approval by the Department of Mines and Mineral  
24       Industries; establishing standards for the approval of plans  
25       for mining in such areas; imposing powers and duties on the  
26       mine foremen and the Department of Mines and Mineral  
27       Industries; and providing penalties."

28       Section 3102. Effective date.

29       This act shall take effect in 60 days.