
THE GENERAL ASSEMBLY OF PENNSYLVANIA

SENATE BILL

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AND WOZNIAK, JANUARY 11, 2008

SENATOR M. WHITE, ENVIRONMENTAL RESOURCES AND ENERGY, AS
AMENDED, JANUARY 15, 2008

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22 becoming outdated and lacks an effective mechanism to modify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. THE LATERAL ←—
12 TAKE-UPS DEFINE THE INTERSECTIONS, PILLARS' CORNERS AND THE
13 SIGNIFICANT VARIATIONS IN ALL EXCAVATIONS. THE FACE TAKE-UPS
14 DEFINE THE LIMITS OF MINING IN ALL FACE AREAS IN ADVANCE OF THE
15 LAST STATION SPAD. FACE TAKE-UPS AND LATERAL TAKE-UPS IN THE
16 FACE AREA ARE NOT TO EXCEED A DISTANCE GREATER THAN 300 FEET
17 FROM THE LAST SURVEY STATION SPAD.

18 "Lost-time injury." When an individual is unable to report
19 for work at the individual's regularly scheduled job on the
20 individual's next regularly scheduled work shift due to a work-
21 related injury.

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

30 "Mine examiner." An individual designated by the mine

1 foreman or superintendent to examine a mine for gas and other
2 dangers. The term shall include the title "fire boss."

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

5 (1) The inside workings of a mine.

6 (2) An individual in a mine.

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

9 "Mine official." Any of the following:

10 (1) Superintendent.

11 (2) Mine foreman.

12 (3) Assistant mine foreman.

13 (4) Mine examiner.

14 (5) Mine electrician.

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

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

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

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

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

28 "Permit boundary." The limits of the mine as established by
29 the coal mine activity permit issued under the act of April 27,
30 1966 (1st Sp. Sess., P.L.31, No.1), known as The Bituminous Mine

1 Subsidence and Land Conservation Act.

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

5 "Pointer spads." Additional spads set in the roof to
6 indicate the line of direction or bearing for future
7 excavations. Pointer spads may or may not be referenced in the
8 field notes. Pointer spads are not considered a permanent record
9 because they only indicate direction.

10 "Representative of the miners." Any person or organization
11 which represents two or more miners at a coal mine for the
12 purpose of this act. A REPRESENTATIVE WHO IS A MINER SHALL BE ←
13 EMPLOYED AT THE MINE AND AUTHORIZED AND CHOSEN BY TWO OR MORE OF
14 THE MINERS EMPLOYED AT THE SAME MINE.

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

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

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

23 "Secretary." The Secretary of Environmental Protection of
24 the Commonwealth or the designee of the secretary.

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

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

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

3 "Superintendent." An individual appointed by an operator to
4 manage a mine.

5 "Survey line." A representation of the line of survey from
6 survey station spad to survey station spad as shown on the
7 official mine map.

8 "Survey station spad." A permanent spad set in the roof that
9 has a unique identification number or designation.

10 "Underground bituminous coal mine." A mine and the surface
11 facilities that are physically connected to a mine, including
12 preparation plants and loadouts at a mine, in this Commonwealth
13 and not included in anthracite boundaries.

14 "Ventilation apparatus." All equipment, materials and
15 devices used to establish, provide or support movement of air
16 through a mine.

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

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

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

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

28 Section 105. Powers and duties of department.

29 The department shall have the power and duty to administer a
30 mine safety program for persons employed at mines. The

1 department has the power and duty to do all of the following:

2 (1) Make inspections of public or private property as
3 are necessary or useful in determining compliance with the
4 provisions of this act, the rules and regulations promulgated
5 under this act and any order, approval or permit issued by
6 the department. The inspections may include examining or
7 copying any documents required by this act.

8 (2) Conduct investigations and interviews of persons at
9 a mine or elsewhere.

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

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

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

18 (6) Determine whether a person is qualified to carry out
19 a particular function or duty at a mine and to issue
20 appropriate certification.

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

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

27 (9) Receive and act upon complaints.

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

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

3 (12) Approve, on a mine-specific basis, the use of new
4 technology, methods, materials, machinery, equipment,
5 systems, tools, devices, processes and plans different from
6 those required or authorized under the provisions of this act
7 or the regulations promulgated under this act. The department
8 may only make approvals where doing so would meet or exceed
9 the protections afforded under this act or the regulations
10 promulgated under this act. Approvals under this section
11 shall have no precedent effect. All approvals in effect as of
12 the effective date of this section shall remain in effect
13 unless suspended, modified or revoked by the department.

14 (13) Respond to coordinate and assist responses to mine
15 accidents and other emergencies.

16 (14) Establish ~~an abandoned~~ A mine map repository. ←

17 (15) Serve as the agency of the Commonwealth for the
18 receipt of funds from the Federal Government or other public
19 agencies and expend the funds for studies and research with
20 respect to and for the enforcement and administration of the
21 purposes and provisions of this act and the regulations
22 promulgated under this act.

23 (16) Assess civil penalties.

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

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

29 (19) Administer, deposit and expend funds from the Mine
30 Safety Fund.

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

3 (21) Perform any act not inconsistent with any provision
4 of this act, which it may deem necessary or proper for the
5 effective administration or enforcement of this act and the
6 rules or regulations promulgated under this act.

7 Section 106. Board of Coal Mine Safety.

8 (a) Establishment.--The Board of Coal Mine Safety is
9 established and shall develop all of the following for
10 recommendation to the department:

11 (1) Amendments that form the basis of the interim
12 mandatory safety standards.

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

16 (3) Other rules and regulations as specifically
17 authorized under this act.

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

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

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

25 (c) Terms.--All appointments shall be subject to the
26 following:

27 (1) The initial appointments after the effective date of
28 this section shall have staggered terms so that, for each
29 group of appointments under subsection (b), one member shall
30 serve a term of one year, one member shall serve a term of

1 two years and one member shall serve a term of three years.
2 All subsequent appointments shall be for terms of three
3 years.

4 (2) Members shall be eligible for reappointment.

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

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

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

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

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

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

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

27 (g) Service.--Members shall serve at the pleasure of the
28 Governor.

29 (h) Compensation.--Members of the board shall be compensated
30 at the appropriate per diem rate based on the prevailing formula

1 administered by the Commonwealth, but not less than \$150 per
2 day, plus reasonable expenses incurred while performing their
3 official duties. The compensation shall be adjusted annually by
4 the department to account for inflation based on the Consumer
5 Price Index published by the United States Department of Labor.
6 An individual board member may waive his or her right to all or
7 part of the compensation.

8 (i) Meetings.--The board shall meet within 180 days of the
9 effective date of this section for, at a minimum, organizational
10 purposes. Members of the board shall meet at least twice during
11 each calendar year or more often as may be necessary.

12 (j) Access.--In performing its functions, the board shall
13 have access to the services of the department. The department
14 shall make clerical support and assistance available to enable
15 the board to carry out its duties.

16 (k) Funding.--Funding for the operation of the board and
17 implementation of the provisions of this chapter shall be
18 derived from the general government appropriation of the
19 department.

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

23 (1) In the case of an appointment to fill a vacancy,
24 nomination of a person for each vacancy shall be requested by
25 and submitted to the Governor within 30 days after the
26 vacancy occurs by the major trade association or major labor
27 organization which nominated the person whose seat on the
28 board is vacant.

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

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

4 Section 106.1. Rulemaking.

5 (a) Authority.--The board shall have the authority to
6 promulgate regulations that are necessary or appropriate to
7 implement the requirements of this act and to protect the
8 health, safety and welfare of miners and other persons in and
9 about mines.

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

12 (1) Existing as of the effective date of this section
13 and that are not included in interim mandatory safety
14 standards.

15 (2) New standards, except for standards concerning
16 diesel equipment, promulgated after the effective date of
17 this section.

18 (c) Regulations.--Within 250 days of the effective date of
19 this section, the board shall begin to consider the standards
20 under subsection (b)(1) for promulgation as regulations. If
21 final regulations are not promulgated by the board within three
22 years of the effective date of this section, the secretary may
23 promulgate final regulations consistent with Federal standards.

24 (d) New standards.--Within 70 days of the effective date of
25 new mine safety standards under subsection (b)(2), the board
26 shall begin to consider standards for promulgation as
27 regulations. If the regulations are not promulgated as final by
28 the board within three years of the effective date of the
29 promulgation of the new standards, the secretary may promulgate
30 final regulations consistent with Federal standards.

1 (e) Justification for regulations.--Regulations shall be
2 based upon consideration of the latest scientific data in the
3 field, the technical feasibility of standards, experience gained
4 under this and other safety statutes, information submitted to
5 the board in writing by any interested person or the
6 recommendation of any member of the board, if the board
7 determines that a regulation should be developed in order to
8 serve the objectives of this act.

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

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

14 (2) Hazards not addressed by existing safety standards.

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

17 (4) The establishment of fees for services in amounts
18 sufficient to cover the department's costs of administering
19 this act. The fees established by the board may be increased
20 each year after implementation by the percentage, if any, by
21 which the Consumer Price Index for the most recent calendar
22 year exceeds the Consumer Price Index for the calendar year
23 1989. For the purposes of this paragraph, the Consumer Price
24 Index for any calendar year shall mean the average of the
25 Consumer Price Index for All Urban Consumers, published by
26 the United States Department of Labor, as of the close of the
27 12-month period ending on August 31 of each calendar year.

28 (g) Safety.--No regulation promulgated by the board shall
29 reduce or compromise the level of safety or protection afforded
30 mine workers under this act. The secretary may disapprove a

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1 ~~notice of a proposed regulation or~~ a final regulation approved
2 by the board which the secretary determines would reduce or
3 compromise the level of safety or protection afforded mine
4 workers under this act if the secretary describes the basis for
5 the disapproval.

6 (h) MINER Act.--With regard to the adoption of Federal
7 standards established pursuant to the Mine Improvement and New
8 Emergency Response Act of 2006 (Public Law 109-236, 120 Stat.
9 493), the following shall apply:

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

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

15 (3) If MSHA fails to promulgate regulations regarding
16 emergency shelters and chambers, the board shall promulgate
17 regulations.

18 (4) Regulations shall be no less stringent than the
19 Federal mine safety standards

20 (i) Action.--The board shall take action on the tests and
21 evaluations performed by the mining industry under section
22 334(b) and (c).

23 (j) Fees.--The department may set reasonable interim fees
24 pending adoption of fee regulations under this section.
25 Section 106.2. Emergency shelters and chambers.

26 The board's emergency shelter or chamber regulations shall
27 ~~accomplish~~ CONSIDER all of the following: <—

28 (1) Provide a minimum of 48 hours of life support,
29 including air, water, emergency medical supplies and food,
30 for the maximum number of miners reasonably expected to be on

1 the working section.

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

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

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

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

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

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

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

20 (9) Provide a minimum of eight quarts of water per
21 miner.

22 (10) Provide a minimum of 4,000 calories of food per
23 miner.

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

26 (12) Provide a first aid kit.

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

29 (14) Contain manufacturer-recommended repair materials.

30 (15) Provide a battery-powered, occupant-activated

1 strobe light, of a model approved by the board, that is
2 visible from the outside indicating occupancy.

3 (16) Provide provisions for communication to the
4 surface.

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

7 Section 106.3. Notice to operators and miners.

8 The department shall send a copy in writing or electronically
9 of every proposed regulation and final regulation, at the time
10 of publication in the Pennsylvania Bulletin, to the operator of
11 each coal mine and the representative of the miners at the mine,
12 and the copy shall be immediately posted on the bulletin board
13 of the mine by the operator or his or her agent. Failure to
14 receive the notice shall not invalidate the final regulation or
15 relieve anyone of the obligation to comply with final
16 regulation.

17 Section 106.4. Standards for surface facilities.

18 The department shall use the applicable standards contained
19 in 30 CFR Part 77 (relating to mandatory safety standards,
20 surface coal mines and surface work areas of underground coal
21 mines) regarding the sinking of shafts and slopes and surface
22 facilities that are part of mines, pending promulgation of
23 regulations by the board regarding those activities and
24 facilities.

25 Section 107. Safety issues.

26 The department shall consider the safety of miners in
27 reviewing and acting on applications for permits issued to and
28 for mines and shall include conditions addressing safety in
29 issuing the permits. If the department determines that any
30 aspect of the contemplated activity at an existing or proposed

1 mine might constitute a threat to the health and safety of
2 miners or persons in and about mines, the department shall
3 require the applicant or operator to eliminate the threat. If
4 the applicant or operator does not eliminate the threat to the
5 department's satisfaction, the department shall deny the
6 application or applications or shall unilaterally modify the
7 terms of the permit or suspend or revoke the permit.

8 Section 108. Inspections.

9 The department shall make frequent inspections of mines. Each
10 mine shall be inspected at least semiannually for electrical
11 purposes and at least quarterly for general purposes.

12 Inspections shall be conducted more frequently when the
13 department determines that more frequent inspections are
14 necessary or desirable. Inspections shall be conducted for the
15 purposes of:

16 (1) Obtaining, utilizing and disseminating information
17 relating to health and safety conditions, the causes of
18 accidents and the causes of diseases and physical impairments
19 originating in mines.

20 (2) Gathering information with respect to health or
21 safety standards established or regulations promulgated under
22 this act.

23 (3) Determining whether a danger exists.

24 (4) Determining whether the mine is in compliance with
25 the provisions of this act, the mine safety regulations and
26 any citation, order, permit or decision issued by the
27 department under this act.

28 Section 109. Accidents.

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

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

3 (2) Take appropriate measures to prevent the destruction
4 of evidence which would assist in investigating the cause of
5 the accident. Unless granted permission by the department, no
6 operator may alter an accident site or an accident-related
7 area until completion of all investigations pertaining to the
8 accident, except to rescue any individual and prevent
9 destruction of mine equipment.

10 (3) Obtain the approval of the department for any plan
11 to recover any person in the mine, to recover the coal mine
12 or to return the affected areas of the mine to normal
13 operations.

14 (4) Conduct its own investigation of the accident and
15 develop a written report of the investigation. The report
16 shall include all of the following:

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

18 (ii) The date the investigation began.

19 (iii) The names of the individuals participating in
20 the investigation.

21 (iv) A description of the accident site.

22 (v) An explanation of the accident or injury,
23 including a description of any equipment involved and
24 relevant events before and after the accident.

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

26 (vii) An explanation of the cause of any injury
27 sustained due to the accident.

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

30 (ix) A sketch depicting the accident, including

1 dimensions where pertinent.

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

4 (b) Duties of department.--In the event of an accident
5 occurring at a mine, the department shall do all of the
6 following:

7 (1) Take whatever action it deems appropriate, including
8 the issuance of orders, to protect the life, health or safety
9 of any person, including coordinating and assisting rescue
10 and recovery activities in the mine.

11 (2) Promptly decide whether to conduct an investigation
12 of the accident and inform the operator and the miners'
13 representative of its decision.

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

16 (1) The operator shall report within ten working days of
17 the accident or lost-time injury. An operator may meet the
18 requirements of this paragraph by submitting a copy of the
19 MSHA Mine Accident, Injury and Illness Report Form 7000-1
20 required by 30 CFR § 50.20 (relating to preparation and
21 submission of MSHA Report Form 7000-1--Mine Accident, Injury,
22 and Illness Report) in use on the date of the accident.

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

27 Section 110. Mine officials' certification.

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

1 (b) Committee.--

2 (1) The department shall appoint a committee to annually
3 review and update the department's database of examination
4 questions and answers. The committee shall be made up of an
5 equal number of persons representing the viewpoints of the
6 department, operators and miners.

7 (2) Members of the committee shall be compensated in the
8 same manner as members of the board under section 106(h). An
9 individual committee member may waive his or her right to all
10 or part of the compensation under this paragraph.

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

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

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

23 Section 111. Classification of mines as gassy.

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

28 Section 112. Reports.

29 (a) Questionnaire.--The operator of an underground mine
30 shall submit to the department a completed or revised deep mine

1 questionnaire in the following instances:

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

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

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

10 (b) Quarterly reports.--

11 (1) Each operator of an active mine shall submit
12 quarterly reports within 15 days after the end of each
13 quarter. The report shall contain information reflecting the
14 activities of the previous quarter and shall include all of
15 the following:

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

17 (ii) Identification of the mine superintendent and
18 mine foreman.

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

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

23 (2) An operator may meet the requirements of paragraph
24 (1) by submitting a copy of the MSHA Quarterly Employment and
25 Coal Production Report in use on the date of the quarterly
26 report.

27 (c) Corrections.--By February 15 of each year, an operator
28 must submit any corrections to the quarterly reports submitted
29 during the prior year and must certify the accuracy of the
30 corrected quarterly reports.

1 (d) Additional duties.--In addition to any records required
2 under this act, a mine operator shall establish and maintain
3 records, make reports and provide information as the department
4 may require from time to time. The department is authorized to
5 compile, analyze and publish, either in summary or detail form,
6 the reports or information obtained. All records, information,
7 reports, findings, notices, orders or decisions required or
8 issued pursuant to or under this act may be published from time
9 to time, may be released to any interested person and shall
10 constitute a public record under the act of June 21, 1957
11 (P.L.390, No.212), referred to as the Right-to-Know Law.

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

16 Section 113. Mine rescue program.

17 (a) Establishment.--The department is authorized to
18 establish and administer a mine rescue program for mines not
19 able to provide a mine rescue crew for themselves. The
20 department shall establish a program to do the following:

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

23 (2) Train mine employees who may voluntarily seek
24 training in the use of self-contained breathing apparatus,
25 gas masks, first aid to the injured and other things or
26 practices essential to the safe and efficient conduct of the
27 work of first aid and mine rescue.

28 (b) Equipment.--The department shall purchase and maintain
29 adequate quantities of emergency response vehicles, specialized
30 equipment, supplies and services necessary to assure rapid and

1 effective response to mine emergencies, including mine fires,
2 mine explosions, mine inundations, entrapments and mine recovery
3 operations.

4 (c) Contracts.--In the event of an emergency response, the
5 department may use the emergency contracting provisions of 62
6 Pa.C.S. § 516 (relating to emergency procurement) to lease
7 additional services or equipment as is needed to respond to a
8 mine emergency. The department, with the consent of the
9 Governor, may use funds available to the Commonwealth for the
10 purpose of responding to a mine emergency.

11 Section 114. Direction of mine rescue work.

12 The department shall coordinate and assist in all responses
13 to a mine emergency conducted in this Commonwealth. The extent
14 of coordination and assistance shall depend on the nature of the
15 mine emergency and the operator's ability to respond to the mine
16 emergency. This authority shall include directing responses to
17 mine emergencies and assigning mine rescue crews and mine rescue
18 and recovery work to mine inspectors or other qualified
19 employees of the department.

20 Section 115. Recovery of funds.

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

24 Section 116. Mine Safety Fund.

25 There is created a special fund known as the Mine Safety
26 Fund. All funds received by the department from fees, including
27 those from fines and certificates of qualification, all civil
28 penalties collected under this act and all funds recovered from
29 operators for expenses incurred in responding to a mine
30 emergency shall be deposited by the State Treasurer into the

1 Mine Safety Fund and shall be used by the department for mine
2 safety activities.

3 Section 117. Bituminous mine inspector.

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

8 (1) Be a resident of this Commonwealth.

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

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

13 (4) Have at least a high school diploma.

14 (5) Be at least ~~31~~ 30 years of age. ←

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

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

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

22 Section 118. Bituminous mine electrical inspector.

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

27 (1) Be a resident of this Commonwealth.

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

30 (3) Be physically capable of entering and inspecting a

1 coal mine.

2 (4) Have at least a high school diploma.

3 (5) Be at least 30 years of age.

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

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

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

12 Section 119. Availability of mine maps.

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

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

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

23 Section 120. Mine map repository.

24 The department shall develop and maintain a repository of all
25 mine maps it has obtained or has had an opportunity to copy. The
26 department shall organize and catalog the mine maps in the
27 repository to enable the department, other government agencies,
28 mine operators and the general public to review the mine maps
29 and to determine the location of mine workings. All mine maps
30 and copies of mine maps held by the department shall be open for

1 public inspection and made available for review upon request
2 during the department's normal business hours.

3 Section 121. Applicability.

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

6 CHAPTER 2

7 GENERAL REQUIREMENTS FOR UNDERGROUND BITUMINOUS MINES

8 Section 201. General safety requirements.

9 The following are general safety requirements:

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

11 (2) All equipment must be maintained in safe operating
12 condition.

13 (3) No person shall be employed as a mine foreman,
14 assistant mine foreman, mine examiner, mine electrician,
15 mining machine operator, shot-firer or miner unless that
16 person holds a current, valid certification from the
17 department to work in that capacity. A person who holds a
18 current, valid certification to be a mine foreman may also
19 work as an assistant mine foreman or mine examiner. Only a
20 mine official shall direct the work force in matters
21 involving the safety of employees. A person who holds a
22 current, valid certification as an assistant mine foreman may
23 also work as a mine examiner.

24 (4) It shall be the duty of the operator and all mine
25 officials to comply with and see that others comply with the
26 provisions of this act, the regulations promulgated pursuant
27 to this act, all orders and approvals and the safety
28 conditions in permits issued to the mine. It shall also be
29 the duty of the operator and all mine officials to cooperate
30 with the department in implementing the provisions of this

1 act and effectuating the purposes of this act.

2 (5) The operator and all mine officials shall comply
3 with and follow all mining plans, approvals and orders issued
4 by the department, rules and regulations of the operator, all
5 provisions of law that are in harmony with this act and all
6 other applicable laws. The operator is responsible for
7 assuring that all activities in and around the mine,
8 including those conducted by contractors, are conducted in
9 compliance with this act, regulations promulgated under this
10 act, approvals and orders issued by the department and any
11 safety conditions included in permits.

12 (6) During coal production, an assistant mine foreman
13 shall be assigned to only one working section. The assistant
14 mine foreman shall supervise persons engaged in the coal-
15 cutting operation. The assistant mine foreman may perform
16 additional duties provided that he spends a majority of his
17 time supervising persons engaged in the coal-cutting
18 operation.

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

29 Section 202. Qualifications for certification.

30 (a) General requirements.--

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

4 (i) An applicant must demonstrate the following
5 levels of work experience in an underground bituminous
6 coal mine:

7 (A) Mine foreman or mine electrician, five
8 years.

9 (B) Assistant mine foreman, four years.

10 (C) Mine examiner, three years.

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

14 (2) If an applicant holds a bachelor's degree in mining
15 engineering or an associate degree in mining technology from
16 a recognized institution of higher education in the case of a
17 mine foreman, assistant mine foreman or mine examiner, or a
18 bachelor's degree in electrical engineering or an associate
19 degree in electrical technology from a recognized institution
20 of higher learning in the case of a mine electrician, in
21 order to be eligible to sit for a certification examination,
22 the following shall apply:

23 (i) An applicant must demonstrate the following
24 levels of work experience in an underground bituminous
25 coal mine:

26 (A) Mine foreman or mine electrician, four
27 years.

28 (B) Assistant mine foreman, three years.

29 (C) Mine examiner, two years.

30 (ii) For each certification category in subparagraph

1 (i), a minimum of one year's experience must have been in
2 a working section.

3 (b) Additional requirements.--The following additional
4 requirements shall apply:

5 (1) All applicants shall be able to read and write the
6 English language intelligently, and shall furnish the
7 department with certificates as to their character and
8 temperate habits, and a notarized statement from previous
9 employers setting forth the length of service and type of
10 work performed in the different mines.

11 (2) Certificates of qualification as mine foremen shall
12 be granted to persons who have given to the department
13 satisfactory evidence of their ability to perform the duties
14 of mine foreman and who have received training by persons
15 approved by the department in determining the presence of
16 explosive and noxious gases, and in the use and mechanics of
17 all gas detection devices, and who have received an average
18 of at least 80% in the examination.

19 (3) Certificates of qualification as assistant mine
20 foremen shall be granted to persons who have given to the
21 department satisfactory evidence of their ability to perform
22 the duties of assistant mine foreman and who have received
23 training by persons approved by the department in determining
24 the presence of explosive and noxious gases, and in the use
25 and mechanics of all gas detection devices, and who have
26 received an average of at least 70% in the examination.

27 (4) Certificates of qualification as mine examiners
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 examiners and who have received training by persons

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

5 (5) Certificates of qualification as mine electrician
6 shall be granted to persons who have given to the department
7 satisfactory evidence of their ability to perform the duties
8 of mine electrician and received training by persons approved
9 by the department in determining the presence of explosive
10 and noxious gases, and in the use and mechanics of all gas
11 detection devices, and who have received an average of 75% in
12 the mine electrician's examination.

13 (6) Certificates of qualification or service granted
14 prior to the effective date of this act shall have equal
15 value with certificates of qualification granted under this
16 act.

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

27 Section 203. Emergency use of mine examiner as assistant mine
28 foreman.

29 The mine foreman may appoint a mine examiner who is willing
30 to act as assistant mine foreman for not more than one month if

1 all of the following apply:

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

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

7 (3) A mine foreman may act as an assistant mine foreman,
8 a mine examiner or a miner. An assistant mine foreman may act
9 as a mine examiner or a miner. A mine examiner may act as a
10 miner.

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

15 Section 204. Certification of miners.

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

26 Section 205. Qualifications for certification as miners.

27 The following shall apply:

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

30 (2) No person shall be qualified to take the examination

1 unless the person produces evidence of having had not less
2 than one year's experience in bituminous coal mines.

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

8 Section 206. Issuance of miners' certificates.

9 The form and manner of issuing miners' certificates shall be
10 designated by the department. Certificates granted shall entitle
11 the certificate holder to be employed as and do the work of a
12 miner in the bituminous coal mines of this Commonwealth. A
13 certificate granted shall not be transferable and a transfer
14 shall be deemed a violation of this act.

15 Section 207. Certification of mining machine operators and
16 shot-firers.

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

28 (b) Eligibility.--An individual possessing a certificate of
29 qualification issued by the Commonwealth entitling the
30 individual to act as a mine foreman, assistant mine foreman,

1 mine examiner or mine electrician is eligible to engage as a
2 mining machine operator in a bituminous coal mine.

3 Section 208. Employment of mine foremen.

4 In order to secure efficient management and proper
5 ventilation of mines, to promote the health and safety of the
6 persons employed in mines and to protect and preserve the
7 property connected with mines, the operator or superintendent
8 shall employ a competent and practical mine foreman for every
9 mine, who shall be under the supervision and control of the
10 operator or superintendent. The operator or superintendent of a
11 mine shall be held as fully responsible as the individual
12 appointed to act as mine foreman. The mine foreman shall have
13 full charge of all the inside workings and the persons employed
14 in the mine, subject, however, to the supervision and control of
15 the operator or superintendent, in order that all the provisions
16 of this act so far as they relate to his duties shall be
17 complied with, and the regulations prescribed for each class of
18 workmen under his charge are carried out in the strictest manner
19 possible.

20 Section 209. Employment of mine electricians.

21 Each mine shall employ a certified mine electrician, who
22 shall have full charge of the electrical apparatus at the mine,
23 but shall be subject to the authority of the mine foreman. It
24 shall be the duty of the mine electrician to assist the mine
25 foreman in carrying out all the provisions of the bituminous
26 mining laws bearing on the use and installation of electricity
27 inside bituminous coal mines and the equipment powered thereby,
28 and the mine electrician shall be subject to the same penalties
29 as the mine foreman for any violation of these laws.

30 Section 210. Employment of assistant mine foremen.

1 When mine workings become so extensive that the mine foreman
2 is unable personally to carry out the requirements of this act
3 pertaining to duties, the mine foreman shall have the right to
4 employ a sufficient number of competent persons to act as his
5 assistants, who shall be under his instruction and the
6 operator's or the superintendent's instruction in carrying out
7 the provisions of this act. In each mine the mine foreman's
8 assistants must possess assistant mine foreman certificates. In
9 case of the necessary temporary absence of the mine foreman, the
10 mine foreman may deputize his responsibilities, for the time
11 being, to an assistant mine foreman, who shall perform all the
12 duties of the mine foreman. Any mine foreman, assistant mine
13 foreman, mine examiner or mine electrician may supervise and
14 direct the work of a maximum of two noncertified miners, and
15 shall instruct the persons how safely and properly to perform
16 their work.

17 Section 211. Ventilation responsibilities of mine foreman.

18 The following shall apply:

19 (1) A mine foreman shall devote the whole of his time to
20 his duties in the mine when the mine is in operation, shall
21 keep careful watch over the ventilating apparatus, the
22 ventilation, airways and travelways and shall see that all
23 stoppings along airways are properly built.

24 (2) A mine foreman shall ensure that proper cut-throughs
25 are made in the pillars of all rooms and entries, and that
26 they are closed when necessary or when required by the
27 department, so that the ventilating current can be conducted
28 in sufficient quantity through the last cut-through to the
29 face of each room and entry. A mine foreman shall not permit
30 any room or entry to be turned in advance of the ventilating

1 current or in advance of the last cut-through in the entry.

2 (3) A mine foreman or an assistant mine foreman shall
3 measure the air current at or near the main inlet and outlet
4 airway at least once each week, and also in the last cut-
5 through in the last room and in the entry beyond the last
6 room turned in each entry. A record shall be made of daily
7 measurements in the assistant mine foreman's daily report
8 book. The measurements shall be taken on days when
9 individuals are at work, and for making the measurements an
10 anemometer shall be provided and kept in good condition by
11 the superintendent of the mine.

12 (4) The following pertain to fan stoppage:

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

16 (A) The power inby the loading point shall be
17 immediately disconnected and all men shall be
18 withdrawn from the face areas of the mine to a point
19 outby the loading point on the main travelway with
20 established communications.

21 (B) As soon as it is known that the ventilation
22 has been interrupted, all permissible battery-powered
23 equipment shall be removed from the immediate face
24 area and moved to a safe location outby the last open
25 crosscut. All other battery-powered mobile equipment,
26 except transportation equipment necessary for
27 evacuation if located in a safe area, shall not be
28 used after a ventilation interruption occurs. If
29 possible, battery terminal leads shall be
30 disconnected. If leads are not disconnected, all

1 switches shall be turned off.

2 (C) If the interruption is less than 15 minutes,
3 the working places, adjacent places and all other
4 active working areas where methane may accumulate
5 will be examined by a certified mine foreman,
6 assistant mine foreman or mine examiner to determine
7 if methane in the amount of 1.0 volume percent or
8 more exists before power is restored and the men are
9 permitted to resume mining operations.

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

12 (A) The power to all underground areas shall be
13 disconnected.

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

16 (C) If ventilation is restored before the
17 evacuation is completed, the certified mine foreman,
18 assistant mine foreman or mine examiner may start the
19 reexamination of the mine, but all other persons must
20 continue to evacuate.

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

23 (iii) As an alternative to evacuating the men on
24 foot, a mine operator may propose to utilize mechanical
25 equipment during the evacuation. To justify this proposal
26 the operator must perform a survey that shows explosive
27 gas will not migrate to or accumulate in the designated
28 haulageways that will be used to evacuate the mine. The
29 duration of the survey shall be at least twice the travel
30 time from the farthest face to the surface. The operator

1 shall provide the representative of the miners, if
2 applicable, an opportunity to participate in the survey.
3 The department will approve the survey criteria. Trolley
4 equipment will not be used during a fan stoppage. If the
5 survey provides affirmative results, which shall be
6 provided to the department, the department shall approve
7 a plan that provides:

8 (A) That permissible transportation equipment
9 shall be used if available.

10 (B) That evacuations shall begin within 15
11 minutes after a ventilation interruption and shall
12 proceed in an orderly and expedient manner.

13 (C) That the minimum number of vehicles will be
14 used for the evacuation.

15 (D) That, during transportation, a certified
16 person qualified to perform methane examinations
17 riding in each vehicle shall continuously monitor for
18 methane using a handheld detector and at specific
19 locations designated by the operator based on the
20 survey results. The speed of the vehicles shall not
21 be so fast as to negate the detector's ability to
22 accurately measure methane levels.

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

27 (F) That the operator, the department and the
28 representative of the miners, if applicable, shall
29 review the plan annually or more frequently if
30 conditions warrant.

1 (iv) If ventilation is restored to normal water
2 gauge before the evacuation is completed, a certified
3 mine foreman, assistant mine foreman or mine examiner may
4 start the reexamination of the mine, but all persons must
5 continue to evacuate.

6 (v) The reexamination shall be made of the mine in
7 the same manner as a preshift examination for a coal-
8 producing shift before any power underground is
9 energized, including battery-powered or diesel-powered
10 equipment, or before persons are permitted to enter the
11 mine. The examination shall be made on foot, except an
12 operator may use permissible transportation equipment on
13 intake travelways only for reexamination after a fan
14 stoppage if the examination is started within the time
15 period established by the survey. The examination shall
16 be recorded in the official mine record books used for
17 examinations under section 218.

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

30 (6) The mine foreman shall see that every mine releasing

1 explosive gas is kept free of standing methane, but any
2 accumulation of explosive or noxious gases in the worked-out
3 or abandoned portions of any mine shall be removed as soon as
4 possible after its discovery, if it is practicable to remove
5 it. No person endangered by the presence of explosive or
6 noxious gases shall be allowed in that portion of the mine
7 until the gases have been removed. The mine foreman shall
8 direct and see that all dangerous places and the entrance or
9 entrances to worked-out and abandoned places in all mines are
10 properly fenced off across the openings so that no person can
11 enter, and that danger signals are posted upon said fencing
12 to warn persons of the existing danger.

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

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

27 The following shall apply:

28 (1) The mine foreman or assistant mine foreman shall
29 direct and see that every working place is properly secured
30 and shall see that no person is directed or permitted to work

1 in an unsafe place, unless it be for the purpose of making it
2 safe. The mine foreman shall see that workmen are provided
3 with sufficient roof support materials delivered to their
4 working place or places. When timbers are used for roof
5 support, they shall be cut square on both ends and as near as
6 practicable to proper length.

7 (2) Every workman in need of roof support materials
8 shall notify the mine foreman or the assistant mine foreman
9 of the fact at least one day in advance, stating the roof
10 support materials are required. In case of emergency, roof
11 support materials may be ordered immediately upon the
12 discovery of danger. If for any reason the necessary roof
13 support materials cannot be supplied when required, the mine
14 foreman or assistant mine foreman shall instruct the workmen
15 to vacate the place until the material needed is supplied.

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

28 (4) The mine foreman shall give prompt attention to the
29 removal of all dangers reported to him by his assistants, the
30 mine examiner or any other person working in the mine, and in

1 case it is impracticable to immediately remove the danger, he
2 shall notify every person whose safety is threatened to
3 remain away from the area of the mine where the dangerous
4 conditions exist.

5 (5) The mine foreman, his assistant or the mine examiner
6 shall, once each week, travel and examine all the air
7 courses, roads and openings that give access to old workings
8 or falls and make a record in ink of the condition of all
9 places in the book provided for that purpose.

10 (6) It shall be the duty of the mine foreman to see that
11 approved gas detection devices are used when and where
12 required by this act. No approved gas detection device shall
13 be entrusted to any person for use in a mine until the person
14 has given satisfactory evidence to the mine foreman that he
15 understands the proper use of the device and the danger of
16 tampering with the device. The transportation of tools into
17 and out of the mine shall be under the direction of the mine
18 foreman or an assistant mine foreman.

19 (7) Instructions shall be given by the mine foreman,
20 assistant mine foreman or mine examiner, or other authorized
21 person, as to when, where and how roof supports shall be
22 placed in order to avoid accidents from falls and to mine
23 coal with safety to themselves and others. In addition, the
24 mine foreman or assistant mine foreman shall give special
25 care and attention to drawing pillars, particularly when
26 falls are thereby being made.

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

28 The following shall apply:

29 (1) The mine foreman shall direct that the coal is
30 properly mined before it is blasted, shot or broken. For

1 purposes of this paragraph, the term "properly mined" shall
2 mean that the coal shall be undercut, centercut, overcut or
3 sheared by pick or machine, and in any case the cutting shall
4 be as deep as the holes are laid.

5 (2) The mine foreman or assistant mine foreman, under
6 instructions from the mine foreman, shall direct that the
7 holes for blasting shall be properly placed and shall
8 designate the angle and depth of holes, which shall not be
9 deeper than the undercutting, centercutting, overcutting or
10 shearing, the maximum quantity of explosives required for
11 each hole and the method of charging and tamping.

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

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

16 The following shall apply:

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

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

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

4 (4) No water or gas from any portion of an abandoned
5 mine, or from any idle portion of an active mine, and no
6 borehole from the surface shall be tapped except under the
7 immediate instruction and direction of the mine foreman with
8 the use of approved gas detection equipment. It shall be
9 unlawful to work or employ individuals to work in any portion
10 of a bituminous coal mine in which a body of water is dammed
11 or held back at a higher elevation in the same mine by
12 natural or artificial means, unless approval is given in
13 writing by the department.

14 (5) The department shall not accept from an operator a
15 six-month mine subsidence map as required by the act of April
16 27, 1966 (1st Sp.Sess. P.L.31, No.1), known as The Bituminous
17 Mine Subsidence and Land Conservation Act, unless the map
18 includes the information required by paragraphs (2), (3) and
19 (4).

20 Section 215. Mine foreman's responsibility for employment of
21 competent persons.

22 A noncertified person may not be employed to operate
23 equipment in a mine until the individual has completed a
24 training program approved by the department and has given the
25 mine foreman satisfactory proof that the individual can do the
26 assigned work without endangering anyone.

27 Section 216. Mine foreman's responsibilities for inspections
28 and reports.

29 The following shall apply:

30 (1) In all mines, the mine foreman shall employ a

1 sufficient number of assistants to ensure a visit to each
2 employee during each shift, except mine officials and miners
3 whose normal duties require travel throughout the mine,
4 either by himself or his assistants.

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

27 (3) When assistant mine foremen are employed, their duty
28 shall be to assist the mine foreman in complying with the
29 provisions of this act, and they shall be liable to the same
30 penalties as the mine foreman for any violation of this act

1 in parts or portions of the mine under their jurisdiction. At
2 the end of each shift, each assistant mine foreman shall make
3 a report in a book provided for that purpose, giving the
4 general condition as to safety of the working places visited,
5 and shall make a note of any unusual occurrence observed
6 during the shift. The mine foreman shall read carefully the
7 daily report of each assistant mine foreman and shall sign
8 the report in ink daily. Where more than one portal is being
9 used for the entrance of miners into a mine, the mine foreman
10 may designate an assistant who holds a mine foreman
11 certificate to sign the assistant mine foreman's and mine
12 examiner's daily report books at each portal other than the
13 main portal.

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

25 Section 217. Employment of mine examiners.

26 The mine foreman shall employ a sufficient number of mine
27 examiners in order that each mine can be examined in accordance
28 with the provisions of this act. The mine foreman or the
29 assistant mine foreman shall see that the mine examiner has left
30 his initials and date and time in places examined or reported as

1 examined.

2 Section 218. Duties of mine examiners.

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

1 or State mine inspectors, or the mine foreman or his assistant,
2 or persons authorized by the mine foreman or assistant mine
3 foreman to enter the place for the purpose of eliminating the
4 dangerous condition, shall enter the place while the sign is
5 posted.

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

1 employees of the mine.

2 (c) Second examination.--A second examination by the same or
3 other mine examiner shall be made during working hours of every
4 working ~~area~~ PLACE where men are employed, and a report of the ←
5 examination shall be made in the mine examiner report book in
6 the same manner as the first examination. No person on a
7 noncoal-producing shift, other than a certified person
8 designated under this subsection, shall enter any underground
9 area in a mine, unless the area, which shall include all places
10 on that particular split of air, has been examined as prescribed
11 in this section within three hours immediately preceding his
12 entrance into the area.

13 Section 219. Management of mine.

14 The right to hire and discharge employees, management of the
15 mine and the direction of the working forces are vested
16 exclusively in the operator, and no person or persons,
17 association or associations, organization or organizations or
18 corporation or corporations shall interfere with or attempt to
19 interfere with, abridge or attempt to abridge, in any manner
20 whatsoever, such right, provided that this does not invalidate
21 any existing or future contract.

22 Section 220. Duties of superintendent.

23 (a) General rule.--It shall be the duty of every
24 superintendent, on behalf and at the expense of the operator, to
25 keep on hand at each mine at all times a sufficient quantity of
26 all materials and supplies required to preserve the health and
27 safety of the employees, as ordered by the mine foreman and
28 required by this act. If, for any reason, the superintendent
29 cannot procure the necessary materials or supplies, he shall
30 immediately notify the mine foreman, whose duty it shall be to

1 withdraw all individuals from the mine, or portion of the mine,
2 until the materials or supplies are received.

3 (b) Examination.--The superintendent shall, at least once
4 every week, read, examine and countersign all reports entered in
5 the mine record book, and if he finds on examination that the
6 law is being violated, the superintendent shall order the mine
7 foreman to stop the violation and shall see that the order is
8 complied with.

9 Section 221. Qualifications and general responsibility of
10 superintendent.

11 The following shall apply:

12 (1) Beginning one year after the effective date of this
13 paragraph, no person may be appointed as a superintendent at
14 any mine in this Commonwealth unless the person holds a
15 current, valid mine foreman certificate. In the event that a
16 superintendent is found by the department to be in breach of
17 his or her responsibilities as superintendent, the department
18 may suspend or revoke the superintendent's mine foreman
19 certificate.

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

22 (3) The superintendent shall not obstruct the mine
23 foreman or other officials in the fulfillment of any of their
24 duties as required by this act, but shall direct, provide the
25 means and see to it that the mine foreman and all the other
26 employees under him comply with the law. The superintendent
27 shall give immediate attention to any violation of the law
28 called to his attention by the department. The superintendent
29 shall be responsible for all the outside workings and all the
30 persons there employed. At any mine where a superintendent is

1 not employed, the duties that are prescribed for the
2 superintendent shall devolve upon the mine foreman, in
3 addition to his regular duties.

4 Section 222. Danger signals.

5 The superintendent of every mine shall provide a sufficient
6 number of danger signals, upon request of the mine foreman,
7 which the mine foreman or the assistant mine foreman shall
8 distribute in the mine at places convenient for the use of the
9 mine examiners and other officials in the fulfillment of their
10 duties. Danger signals in all mines shall be uniform and of a
11 design approved by the department. All danger signals shall be
12 kept in good condition and no defective signal shall be used in
13 any mine.

14 Section 223. Supply of record books.

15 The superintendent shall keep on hand at the mine a supply of
16 the record books required by this act and shall see that record
17 books are delivered to the proper persons at the mine and that
18 they are properly cared for.

19 Section 224. Mapping requirements and surveying standards.

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

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

28 (2) An accurate delineation of the current extent of the
29 workings of the mine and all mines or coal lands, or both,
30 inside the permit boundary and all mines or coal lands, or

1 both, within 1,000 feet of the outside of the permit
2 boundary. The delineation must show all workings of all mines
3 above and below the mine within the permit boundary and
4 within 1,000 feet of the outside of the permit boundary.

5 (3) Barrier pillars for all mine workings inside the
6 permit boundary and all mine workings adjacent to the permit
7 boundary.

8 (4) Two permanent baseline points coordinated with the
9 underground and surface traverse points, and two permanent
10 elevation benchmarks referencing mine elevation surveys. The
11 baseline points and elevation benchmarks shall be prepared
12 using the Pennsylvania State Plan Coordinate System (NAD83
13 Datum). In the alternative, the map shall include coordinate
14 transformation equations converting the baseline points shown
15 to correlate to the Pennsylvania State Plan Coordinate
16 System.

17 (5) All openings, excavations, shafts, slopes, drifts,
18 tunnels, entries, crosscuts, rooms, boreholes and all other
19 excavations, including surface pits and auger holes in each
20 seam.

21 (6) Areas where the pillars or longwall panels have been
22 removed.

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

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

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

29 (10) Bottom of coal elevations, taken at intervals not
30 to exceed 300 feet apart, in one entry of each section and in

1 one entry of each set of rooms off such sections.

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

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

8 (13) The number or designation of each survey station
9 and the date of the last survey in the entries, as they are
10 represented on the map.

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

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

17 (16) The location of permanent surface features such as
18 railroad tracks, public highways, permanent buildings and oil
19 and gas wells.

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

21 (b) Accuracy standards.--The following accuracy standards
22 must be met:

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

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

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

30 (c) Surveying standards.--The extent of surveying shown on

1 the map shall be acceptable where the following minimum
2 underground surveying standards are met:

3 (1) Every entry must be surveyed at intervals not to
4 exceed 300 lineal feet. Survey station spads shall be
5 established in each entry of all mains, sections, butts,
6 rooms and other excavations. Survey lines may extend from
7 adjacent entries as long as the interval between survey
8 station spads within an entry does not exceed 300 lineal
9 feet. Continuous survey lines must be maintained in at least
10 one entry.

11 (2) Lateral take-ups, left and right, must be taken in
12 every entry at all intersections and must denote the location
13 of all intersections and define the corners and the location
14 of the rib line within each entry. For any excavation greater
15 than 20% from the planned excavation, additional lateral
16 take-ups must be taken to define this area. All of the
17 information must be accurately portrayed on the mine map.

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

22 (4) A survey station spad is required to be within 300
23 feet of the deepest penetration of the final faces of each
24 mining section, butt or room. The number or designation of
25 the last survey station spad and the date of such survey of
26 the entries are to be shown on the mine map. The area from
27 this spad to the face will be considered surveyed provided
28 that lateral and face take-ups have been completed and
29 recorded in the field book and shown on the mine map. Field
30 books shall be available for inspection. If lateral and face

1 take-ups are not completed, the area inby the last survey
2 station spad must be identified on the map with dashed lines.
3 The survey station spads located in each mining section, butt
4 or room shall be tied to a check survey station.

5 (5) Check survey stations shall be advanced to within
6 300 feet of the deepest penetration of all mains, submains,
7 sections and butts. Check survey stations shall be advanced
8 to within 600 feet of the deepest penetration of all rooms.

9 (6) Check survey stations shall be advanced to within
10 100 feet of the deepest penetration of all mining sections,
11 butts, rooms and excavations adjacent to the permit or
12 property boundary lines.

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

18 Section 225. Availability of copy of map.

19 A true copy of the map made pursuant to section 224 shall be
20 kept in the mine office for the use of the mine officials and
21 mine inspector in the district, and for the inspection, in the
22 presence of the superintendent or mine foreman, of any person
23 working in the mine, or of authorized representatives of the
24 employees of the mine, whenever the person or representative
25 fears that any working place is becoming dangerous by reason of
26 its proximity to other workings that may contain dangerous
27 accumulations of water or noxious gases.

28 Section 226. Excavations on map.

29 At least once every six months, the operator or
30 superintendent of every mine shall cause to be shown accurately

1 on the original map of the mine, and on the copy of the map in
2 the mine office, all the excavations made during the time that
3 elapsed since the excavations were last shown.

4 Section 227. Furnishing copies of maps.

5 A copy of the mine map shall be furnished every six months to
6 the department. When more than one seam of coal is being worked
7 in any mine, the department shall be provided with a separate
8 copy of the original map of the complete workings of each seam
9 as provided for under this act. The copies shall remain in the
10 care of the department. When one mine is working a seam of coal
11 under another mine that is working an overlying seam and the two
12 mines are operated by different operators, the operators shall
13 exchange with each other copies of their respective mine maps,
14 showing such portions of their respective mines as may be
15 directly above or below the other mine.

16 Section 228. Duties upon abandonment of mine.

17 (a) General rule.--If a mine is inactive for a period of 60
18 days or more or if the operator intends to cease ventilation of
19 the mine, the operator or the superintendent shall notify the
20 department at once and shall, within 60 days, extend the
21 official map to show clearly all worked-out or abandoned
22 territory with all excavations, property and boundary lines,
23 elevations and map features as required under this act or, if
24 the workings are not accessible, provide a copy of the most
25 recent map available that is clearly marked to state that the
26 workings shown were not surveyed. The owner or operator of the
27 mine shall also, within 45 days after its change in status, send
28 to the department a tracing, print or digital map in a format
29 acceptable to the department of the complete original map. The
30 registered mining engineer or registered surveyor shall certify

1 that the tracing, print or digital map is a true and correct
2 copy of the original map of the mine and that the original map
3 is a true, complete and correct map and survey of all the
4 excavations made in the inactive or abandoned mine. A dated
5 statement signed by a company or corporate officer stating that
6 the map represents a complete and accurate representation of all
7 underground excavations and is the final map of the mine, or
8 stating that the map provided is not a surveyed final map due to
9 inaccessibility of the workings, shall be included.

10 (b) Violation.--If the operator, superintendent or company
11 or corporate officer fails to provide the certified final map or
12 recklessly or intentionally submits an inaccurate certified map,
13 the violation shall be a felony subject to prosecution under
14 section 505. Costs incurred by the Commonwealth as a result of a
15 violation of this subsection may be recovered as restitution.
16 Section 229. Survey by department.

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

21 Section 230. Ventilation requirements.

22 (a) General rule.--The operator or superintendent of a mine
23 shall provide and maintain ample means of ventilation to furnish
24 a constant and adequate supply of pure air for the employees.
25 The quantity and velocity of the current of air shall be
26 sufficient to dilute so as to render harmless and carry away
27 flammable or harmful gases.

28 (b) Specification.--The quantity of air reaching the last
29 open crosscut in any pair or set of entries shall not be less
30 than 9,000 cubic feet per minute. All active underground work

1 areas in a mine shall be ventilated by a current of air
2 containing not less than 19.5% oxygen and not more than .5%
3 carbon dioxide and no harmful quantities of other noxious or
4 poisonous gases.

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

7 (1) The following requirements apply:

8 (i) The quantity of air traveling in the belt
9 conveyor shall be kept to the minimum quantity necessary
10 for effective ventilation by means of permanent stoppings
11 and regulators.

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

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

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

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

22 (ii) Stoppings and regulators are arranged to reduce
23 the quantity of air traveling in the belt and common
24 entries to a minimum for effective ventilation of the
25 belt and common entries and to provide an intake air
26 split as an escapeway to the main air current.

27 (iii) Fire protection is installed and maintained on
28 all belt conveyors in compliance with appropriate
29 standards.

30 (iv) There is an early warning fire detection system

1 and carbon monoxide (CO) or smoke sensors that meet the
2 requirements of 30 CFR § 75.351 (relating to atmospheric
3 monitoring systems). The spacing of the CO/smoke sensors
4 shall not exceed 1,000 feet. The belt air velocity shall
5 be a minimum of 50 fpm or CO/smoke sensor spacing shall
6 be reduced to provide an adequate alarm time not to
7 exceed 20 minutes. The CO/smoke sensors shall be set to
8 alarm at the lowest practicable setting and be positioned
9 in the ventilation current to provide the most effective
10 detection.

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

13 (vi) Development for common entries is designed to
14 be at a lower ventilation pressure than the main intake
15 escapeway.

16 (vii) If a condition develops that causes the belt
17 and common entries to be at a higher ventilation pressure
18 than the main intake escapeway, efforts are undertaken to
19 immediately correct the condition. If the condition
20 cannot practicably be corrected, the mine operator must
21 notify the department of the condition, the specific
22 cause, the area affected and the steps that will be taken
23 to maintain the pressure in the belt and common entries
24 at the lowest attainable level.

25 (viii) When the belt ventilation current travels
26 away from the working section, no ignition sources,
27 except equipment necessary to maintain the escapeway and
28 personnel carriers, shall be permitted in the intake
29 escapeway unless CO/smoke sensors that meet Federal fire
30 detection standards are installed in the intake

1 escapeway. Equipment operated in the intake escapeway
2 shall be equipped with an automatic fire suppression
3 system, or comply with 30 CFR § 75.380(f)(4) (relating to
4 escapeways; bituminous and lignite mines). CO detectors
5 shall give an audible alarm over the mine communication
6 system. The alarm shall indicate the conveyor belt flight
7 where the alarm occurred. Both visual and audible alarm
8 signals must automatically be provided at all affected
9 working sections and affected areas where mechanized
10 mining equipment is being installed or removed and on the
11 surface at a monitored location. Two-way underground
12 communications shall be maintained between the monitored
13 surface location and all underground working sections and
14 areas where mechanized mining equipment is being
15 installed or removed.

16 (ix) A copy of the mine's federally approved
17 firefighting and evacuation plan is included with the
18 plan.

19 (d) Actions to detect and respond to excess methane.--The
20 following actions are required to detect and respond to excess
21 methane:

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

25 (2) Working places and intake air courses.

26 (i) When 1% or more methane is present in a working
27 place or an intake air course, including an air course in
28 which a belt conveyor is located or in an area where
29 mechanized mining equipment is being installed or
30 removed:

1 (A) Except intrinsically safe atmospheric
2 monitoring systems (AMS), electrically powered
3 equipment in the affected area shall be deenergized
4 and other mechanized equipment shall be shut off.

5 (B) Changes or adjustments shall be made
6 immediately to the ventilation system to reduce the
7 concentration of methane to less than 1%.

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

11 (ii) When 1.5% or more methane is present in a
12 working place or an intake air course, including an air
13 course in which a belt conveyor is located or in an area
14 where mechanized mining equipment is being installed or
15 removed:

16 (A) Except for Federal or State mine inspectors,
17 the mine foreman or assistant mine foreman or persons
18 authorized by the mine foreman or assistant mine
19 foreman, all persons shall be withdrawn from the
20 affected area.

21 (B) Except for intrinsically safe AMS,
22 electrically powered equipment in the affected area
23 shall be disconnected at the power source.

24 (3) Return air split.

25 (i) When 1% or more methane is present in a return
26 air split between the last working place on a working
27 section and where that split of air meets another split
28 of air or the location at which the split is used to
29 ventilate seals or worked-out areas, changes or
30 adjustments shall be made immediately to the ventilation

1 system to reduce the concentration of methane in the
2 return air to less than 1%.

3 (ii) When 1.5% or more methane is present in a
4 return air split between the last working place on a
5 working section and where that split of air meets another
6 split of air or the location where the split is used to
7 ventilate seals or worked-out areas, except for Federal
8 or State mine inspectors, the mine foreman or assistant
9 mine foreman or persons authorized by the mine foreman or
10 assistant mine foreman, all persons shall be withdrawn
11 from the affected area.

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

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

19 (4) Return air split alternative.

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

21 (A) The quantity of air in the split ventilating
22 the active workings is at least 27,000 cubic feet per
23 minute in the last open crosscut or the quantity
24 specified in the approved ventilation plan, whichever
25 is greater.

26 (B) The methane content of the air in the split
27 is continuously monitored during mining operations by
28 an AMS that gives a visual and audible signal on the
29 working section when the methane in the return air
30 reaches 1.5% and the methane content is monitored as

1 specified in the approved ventilation plan.

2 (C) Rock dust is continuously applied with a
3 mechanical duster to the return air course during
4 coal production at a location in the air course
5 immediately outby the most inby monitoring point.

6 (ii) When 1.5% or more methane is present in a
7 return air split between a point in the return opposite
8 the section loading point and where that split of air
9 meets another split of air or where the split of air is
10 used to ventilate seals or worked-out areas:

11 (A) Changes or adjustments shall be made
12 immediately to the ventilation system to reduce the
13 concentration of methane in the return air less than
14 1.5%.

15 (B) Except for Federal or State mine inspectors,
16 the mine foreman or assistant mine foreman or persons
17 authorized by the mine foreman or assistant mine
18 foreman, all persons shall be withdrawn from the
19 affected area.

20 (C) Except for intrinsically safe AMS, equipment
21 in the affected area shall be deenergized, electric
22 power shall be disconnected at the power source and
23 other mechanized equipment shall be shut off.

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

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

28 (1) If either the concentration of methane in a bleeder
29 split of air immediately before the air in the split joins
30 another split of air, or in a return air course other than as

1 described in subsection (d)(3) and (4), contains methane gas
2 in an amount of ~~1%~~ 2% or greater as detected by an approved <—
3 gas detection device, changes or adjustments shall be made
4 immediately in the ventilation in the mine so that returning
5 air contains less than ~~1%~~ 2% of methane gas. <—

6 (2) When 2% of methane is exceeded ~~in a bleeder~~ BEYOND <—
7 THE MIXING POINT WITH ANOTHER SPLIT IN THE MAIN return, the
8 operator shall submit a written plan to abate the problem to
9 the department for approval.

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

11 (1) A mine operator shall submit a detailed ventilation
12 plan and any addendums to the department for review and
13 comment. The mine operator shall review the plan with the
14 department and address concerns to the extent practicable.
15 The department shall submit any concern that is not addressed
16 to MSHA through comments to the plan. ~~The mine operator shall~~ <—
17 ~~provide a copy of the plan to the representative of the~~
18 ~~miners, if applicable, ten days prior to the submittal of the~~
19 ~~plan for review and comment to the department.~~ THE MINE <—
20 OPERATOR SHALL PROVIDE A COPY OF THE PLAN TO THE DEPARTMENT
21 AND THE REPRESENTATIVE OF THE MINERS, IF APPLICABLE, TEN DAYS
22 PRIOR TO THE SUBMITTAL OF THE PLAN TO MSHA.

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

26 (3) In the event of an unforeseen situation requiring
27 immediate action on a plan revision, the operator shall
28 submit the proposed revision to the department and the
29 representative of the miners when the proposed revision is
30 submitted to MSHA. The department shall work with the

1 operator to review and comment on the proposed plan revision
2 to MSHA as quickly as possible.

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

5 Section 231. Crosscuts and stoppings.

6 (a) Maximum distance.--

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

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

17 (3) Where adequate ventilation can be provided, the
18 department may give written permission to authorize a greater
19 distance.

20 (b) Closure of crosscuts.--Crosscuts between intakes and
21 return air courses shall be closed, except the one nearest the
22 face. Crosscuts between rooms shall be closed, where necessary
23 or when required by the department, to provide adequate
24 ventilation at the working face.

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

28 (d) Excavations.--Excavations shall not exceed 18 feet in
29 depth, unless permission is obtained from the department to
30 drive a greater distance beyond the last open crosscut, if such

1 excavations are kept free of accumulations of methane by use of
2 line brattice or other adequate means.

3 (e) Construction materials of stoppings.--A permanent
4 stopping shall be built of solid, substantial, incombustible
5 material, including, but not limited to, concrete, concrete
6 blocks, bricks, steel or tile, provided that, where physical
7 conditions exist because of caving that makes the use of
8 concrete, concrete blocks, brick, steel or tile impracticable,
9 timber laid longitudinally skin-to-skin or an approved
10 substitute may be used. A temporary stopping may be erected in
11 cut-throughs near the working face. A stopping shall be
12 reasonably airtight.

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

16 (1) Between intake and return air courses, except a <—
17 ~~temporary control, the device may be used in a room that is~~
18 TEMPORARY CONTROLS MAY BE USED IN ROOMS THAT ARE 600 feet or <—
19 less from the centerline of the entry from which the room was
20 developed, including where continuous face haulage systems
21 are used in the ~~room~~ ROOMS. Unless otherwise approved in the <—
22 ventilation plan, the stopping or control shall be maintained
23 to and including the third connecting crosscut outby the
24 working face.

25 (2) To separate belt conveyor haulageways from intake
26 air courses when the air in the intake air courses is used to
27 provide air to active working places, temporary ventilation
28 controls may be used in ~~a room that is~~ ROOMS THAT ARE 600 <—
29 feet or less from the centerline of the entry from which the
30 ~~room was~~ ROOMS WERE developed, including where continuous <—

1 face haulage systems are used in the ~~room~~ ROOMS. When
2 continuous face haulage systems are used, a permanent
3 stopping or other device shall be built and maintained to the
4 outby most point of travel of the dolly or 600 feet from the
5 point of deepest penetration in the conveyor belt entry,
6 whichever distance is closer to the point of deepest
7 penetration, to separate the continuous haulage entry from
8 the intake entries.

9 Section 232. Overcasts and undercasts.

10 (a) Arrangement of ventilation.--Ventilation shall be so
11 arranged by means of air locks, overcasts or undercasts that the
12 passage of trips or persons along the entries will not cause
13 interruptions of the air current. In face areas where it is
14 impracticable to install air locks, single doors may be used
15 with the permission of the department. An air lock shall be
16 ventilated sufficiently to prevent accumulations of methane in
17 it.

18 (b) Doors.--

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

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

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

27 (d) Construction materials.--Overcasts and undercasts shall
28 be constructed tightly of incombustible material, such as
29 masonry, concrete, concrete blocks or fire-resistant
30 prefabricated material of sufficient strength to withstand

1 possible falls from the roof. Overcasts and undercasts shall be
2 of ample area to pass the required quantity of air and shall be
3 kept clear of obstructions.

4 Section 233. Line brattice.

5 (a) General rule.--Substantially constructed line brattice
6 shall be used from the last open crosscut of an entry or room
7 when necessary or required by the department to provide adequate
8 ventilation for the workmen and to remove gases and explosive
9 fumes. When damaged by falls or otherwise, line brattice shall
10 be repaired promptly.

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

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

17 Section 234. Auxiliary blowers and fans.

18 (a) Procedure.--

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

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

25 (i) Approve the plan.

26 (ii) Request additional information.

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

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

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

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

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

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

11 Section 235. Unused and abandoned parts of mines.

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

16 Section 236. Sewage dumping prohibited.

17 If any person shall construct or cause to be constructed for
18 use after the effective date of this section a sewer or other
19 method of drainage from a building or dwelling house for the
20 carrying of sewage, offal, refuse or other offensive matter into
21 any portion of an operating or abandoned mine, the person
22 commits a misdemeanor of the third degree.

23 Section 237. Fans.

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

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

1 (c), a main fan shall be:

2 (1) Located on the surface in fireproof housing offset
3 not less than 15 feet from the nearest side of the mine
4 opening.

5 (2) Equipped with fireproof air ducts provided with
6 explosion doors or a weakwall.

7 (3) Operated from a separate power circuit.

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

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

13 (2) There is another opening having a weakwall stopping
14 or explosion doors that would be in direct line with forces
15 coming out of the mine.

16 All main fans shall be provided with pressure-recording gauges
17 or water gauges.

18 (d) Recordkeeping and inspections.--

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

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

23 (e) Warning of fan interruption.--Approved facilities shall
24 be provided at a point or points under observation while men are
25 in the mine and shall give warning of an interruption to a fan.
26 Where such facilities are not provided, an attendant shall be
27 constantly kept on duty while individuals are working in the
28 mine.

29 Section 238. Measurement of methane.

30 The mine foreman or superintendent shall once each week

1 direct and see that the methane content of the ventilating
2 current or currents is determined by analyses or by an
3 instrument capable of accuracy to .1%. The samples or the
4 determinations shall be taken on the return end of the air
5 circuit or circuits just beyond the last working place, unless
6 otherwise directed by the department, and a correct report of
7 these determinations shall be promptly furnished to the
8 department. The determinations or samples shall be taken on days
9 when individuals are working and recorded in a book provided for
10 that purpose.

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

12 (a) Method of removal.--

13 (1) Dangerous accumulations of fine, dry coal dust shall
14 be removed from a mine or neutralized by the application of
15 rock dust, and all dry and dusty operating sections and
16 haulageways and the back entries for at least 1,000 feet
17 outby the first active working place in each operating
18 section shall be kept watered down, rock dusted or dust
19 allayed by such other methods as may be approved by the
20 department.

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

25 (3) Coal dust and other dust in suspension in unusual
26 quantities shall be allayed by sprinkling or other dust
27 allaying or collecting devices.

28 (b) Specifications.--

29 (1) In a dry and dusty mine or section thereof, rock
30 dust shall be applied and maintained upon the roof, floor and

1 sides of all operating sections, haulageways and parallel
2 entries connected thereto by open crosscuts. Back entries
3 shall be rock dusted for at least 1,000 feet out by the
4 junction with the first active working place.

5 (2) Rock dust shall be so applied to include the last
6 open crosscut of rooms and entries and to within 40 feet of
7 the faces. In mines where mining is done by continuous-type
8 mining machinery, the distances from the face to which rock
9 dust shall be applied shall be the mining distance for one
10 shift if:

11 (i) The active working place shall be kept from damp
12 to wet.

13 (ii) After coal production on any shifts has ceased,
14 an application of rock dust shall be made in the exposed
15 area to within 40 feet of the face before additional
16 mining is performed in the area.

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

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

24 Section 240. Instruction of employees and examination of
25 working areas.

26 (a) General rule.--The mine foreman or assistant mine
27 foreman shall ascertain that all workmen are trained in the
28 proper methods of testing roof, face and ribs. The mine foreman
29 shall designate the tool or tools to be used for testing.

30 Employees whose work exposes them to hazards or falls of roof

1 and coal shall thoroughly test the roof, face and ribs before
2 starting to work or before starting a machine, and frequently
3 thereafter.

4 (b) Examination for date marks.--A miner shall examine his
5 place to determine whether the mine examiner has left the date
6 marks indicating his examination thereof. If date marks cannot
7 be found, the miner shall notify the mine foreman or assistant
8 mine foreman of that fact.

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

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

13 (2) If roof, face or rib conditions are found to be
14 unsafe and normal taking down or supporting practices cannot
15 correct the unsafe condition, the place shall be vacated and
16 guarded or a danger sign erected to prevent unauthorized
17 entrance and the certified mine official in charge promptly
18 shall be notified. Only individuals capable of correcting the
19 dangerous condition may be delegated to do such work.

20 (3) The certified mine official in charge shall examine
21 for unsafe conditions and the roof, faces, ribs and timbers
22 or supports of all working places each time they visit a
23 place. Unsafe conditions found shall be corrected promptly.
24 All employees shall notify the mine foreman or assistant mine
25 foreman of an unsafe condition in the mine when the condition
26 is known to them.

27 Section 241. Roof support.

28 (a) General rule.--The roof in an underground area shall be
29 supported as necessary for the protection of the employees and
30 equipment. A roof control plan suitable to the roof conditions

1 of each mine or part of a mine shall be adopted and complied
2 with by the operator. The department shall be notified of the
3 adoption of the plan of roof support, shall review the plan and:

4 (1) approve it;

5 (2) request additional information; or

6 (3) disapprove the plan and state in writing its reason
7 for the disapproval.

8 (b) Roof support plans to be posted.--Workmen whose work
9 involves roof support shall be informed of approved roof support
10 plans and the plans shall be posted. Additional roof supports
11 shall be used when and where necessary.

12 (c) Periodic revision and update of roof control plan.--
13 Every mine operator shall revise and update the roof control
14 plan every six months or more frequently if required to do so by
15 the department. A copy of the plan shall be provided to the
16 representative of the miners ten days prior to submitting it to
17 the department for review and comment.

18 Section 242. Authorized explosives.

19 Permissible explosives, approved breaking devices or approved
20 blasting devices shall be used in underground mines.

21 Section 243. (Reserved).

22 Section 244. Underground storage of explosives.

23 (a) Placement.--Explosives and detonators stored underground
24 shall be:

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

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

30 (b) Separation.--If not kept in separate boxes or magazines

1 not less than five feet apart, the explosives and detonators may
2 be kept in the same box or magazine if separated by at least a
3 four-inch hardwood partition or the equivalent. The boxes or
4 magazines shall be kept at least 300 feet from the faces and out
5 of the direct line of blasting and shall be installed outby the
6 last permanent stopping and on intake air.

7 Section 245. Preparation of shots, blasting practices and
8 multiple shooting.

9 (a) Requirements.--

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

12 (2) Only electric detonators of proper strength fired
13 with approved shot-firing units shall be used, and drillholes
14 shall be solidly stemmed with at least 24 inches of
15 incombustible material or at least one-half of the length of
16 the hole shall be solidly stemmed if the hole is less than
17 four feet in depth unless other approved stemming devices or
18 methods are used.

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

25 (4) Ample warning shall be given before shots are fired,
26 and care shall be taken to determine that all persons are in
27 the clear before firing. Individuals shall be removed from
28 adjoining areas and other areas when there is danger of shots
29 blowing through.

30 (5) No shots shall be fired:

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

3 (ii) In any area where ~~gas can be~~ 1% OF GAS IS ←
4 detected by an approved gas detection device.

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

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

12 (c) Prohibitions.--

13 (1) While boreholes are being charged, electrical
14 equipment shall not be operated in the work area, and only
15 work in connection with roof support and general safety shall
16 be performed. Shots shall be fired promptly after charging.

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

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

23 (e) Blasting and shooting cables.--

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

28 (2) Shooting cables shall be kept away from power wires
29 and all other sources of electric current, connected to the
30 leg wires by the person who fires the shot, staggered as to

1 length or well-separated at the detonator leg wires and
2 shunted at the battery end until ready to connect to the
3 blasting unit.

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

6 Section 246. Transportation of explosives.

7 (a) Construction of containers.--

8 (1) Individual containers used to carry permissible
9 explosives or detonators shall be constructed of substantial,
10 nonconductive materials approved by the department, kept
11 closed and maintained in good condition. When explosives or
12 detonators are transported underground in cars moved by means
13 of powered haulage equipment, they shall be in cars having a
14 substantial covering or in special substantially built
15 covered containers used specifically for transporting
16 detonators or explosives.

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

20 (b) Prohibitions.--

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

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

28 (c) Separation of explosives and detonators.--If explosives
29 and detonators are transported in the same explosives car or in
30 the same special container, they shall be separated by at least

1 four inches of hardwood partition or the equivalent. The bodies
2 of the cars or containers shall be constructed or lined with
3 nonconductive material.

4 Section 247. Electrical shot-firing.

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

7 Section 248. General shot-firing rules.

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

13 (b) Shot-firer to provide notice to others.--When a shot-
14 firer is about to fire a blast, he shall notify all persons who
15 may be endangered and shall give sufficient alarm so that any
16 person approaching may be warned of the danger.

17 (c) Construction of charging and tamping tools.--All
18 charging and tamping tools shall be constructed of nonsparking
19 materials.

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

23 (e) Preconditions to firing machine or battery.--No firing
24 machine or battery shall be connected to the shot-firing leads
25 unless:

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

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

29 (3) No person other than the shot-firer has made the
30 connection.

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

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

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

10 Section 249. Hoisting equipment and operations.

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

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

14 (i) A telephone or other means of communication from
15 the top to the bottom and intermediate landings of the
16 shaft.

17 (ii) A standard means of signaling.

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

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

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

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

26 (2) The operator shall have the machinery used for
27 lowering and hoisting persons into or out of the mine kept in
28 safe condition and equipped with a reliable indicator. Cages
29 and elevators shall be inspected once in each 24 hours by a
30 competent person of the company or by a manufacturer's

1 representative and a safety catch test made every two months,
2 a record kept thereof and a copy sent to the mine inspector.

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

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

12 (4) There shall be cut out around the side of the
13 hoisting shaft, or driven through the solid strata at the
14 bottom thereof, a travelingway not less than five feet high
15 and three feet wide to enable a person to pass the shaft in
16 going from one side to the other without passing over or
17 under the cage or other hoisting apparatus.

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

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

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

28 (b) Duties of mine foreman.--

29 (1) When hoisting or lowering of individuals occurs
30 during darkness, at any mine operated by shaft, the mine

1 foreman shall provide and maintain, at the shaft mouth, a
2 light of stationary character sufficient to show the landing
3 and all surrounding objects distinctly and sufficient light
4 of a stationary character shall be located at the bottom of
5 the shaft so that persons going to the bottom may clearly
6 discern the cages, elevators and other objects contiguous
7 thereto.

8 (2) The mine foreman shall see that:

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

12 (ii) No mine cars, either empty or loaded, are
13 hoisted or lowered on cages while individuals are being
14 lowered or hoisted.

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

20 (c) Ropes, links and chains.--

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

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

29 (3) All ropes, links and chains shall be carefully
30 examined at least once every 24 hours by a competent person

1 delegated for that purpose by the superintendent.

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

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

11 (d) Cage requirements.--

12 (1) (i) The operator or superintendent shall provide
13 every cage used for lowering or hoisting persons with
14 handrails at sides or overhead or additional suitable
15 devices and with a bar or gate at ends.

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

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

23 (e) Signaling system.--

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

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

29 (ii) One signal to stop the car or cage when in
30 motion.

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

2 (iv) Three signals to hoist persons.

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

6 Section 250. Bottom person.

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

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

13 (2) Personally attend to the signals and see that the
14 provisions of this act in respect to hoisting persons in
15 shafts or slopes are complied with.

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

23 (4) Immediately inform the mine foreman of any
24 violation.

25 (5) Not attempt to withdraw the car until the cage comes
26 to a rest.

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

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

3 Section 251. Number of persons to be hoisted.

4 (a) General rule.--No greater number of persons shall be
5 lowered or hoisted at any one time in any shaft or slope than is
6 permitted by the department. Whenever the number of persons
7 returning from work shall arrive at the bottom of the shaft or
8 slope in which persons are regularly hoisted or lowered, they
9 shall be promptly furnished with an empty cage, car or elevator
10 and be hoisted to the surface. In cases of emergency, a lesser
11 number than permitted shall be promptly hoisted.

12 (b) Posting of notice.--A notice of the number permitted to
13 be lowered or hoisted at any one time shall be posted by the
14 operator or superintendent in conspicuous places at the top and
15 bottom of the shaft, and the cage or cages or other safe means
16 of egress shall be available at all times for the persons
17 employed in any mine that has no second outlet available.

18 Section 252. Top person.

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

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

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

29 (3) Not allow any tools to be placed on the same cage
30 with persons or on either cage when persons are being lowered

1 into the mine, except for the purpose of repairing the shaft
2 or the machinery in the shaft. Individuals shall place their
3 tools in containers or cars provided for that purpose, which
4 containers or cars shall be lowered before or after the
5 individuals have been lowered.

6 (4) If located on a slope or incline plane, close the
7 safety block or other device as soon as the cars have reached
8 the landing in order to prevent any loose or runaway cars
9 from descending the slope or incline plane, and in no case
10 shall the safety block or other device be withdrawn until the
11 cars are coupled to the rope or chain and the proper signal
12 given.

13 (5) Carefully inspect each day all the machinery in and
14 about the headframe and the rope used, promptly report to the
15 superintendent any defect discovered and securely attach the
16 cars to the rope before lowering them down the incline.

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

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

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

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

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

1 Section 253. Use of competent hoist operators.

2 (a) Prohibitions.--

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

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

12 (3) No person shall interfere with or intimidate the
13 hoist operator in the discharge of the duties of the hoist
14 operators.

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

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

22 Section 254. Clearances and shelter holes.

23 (a) Specifications for clearances.--

24 (1) Track switches, except room and entry development
25 switches, shall be provided with properly installed throws,
26 bridle bars and guard rails.

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

29 (3) Haulage roads shall have a continuous unobstructed
30 clearance of at least 30 inches from the widest extension of

1 regular coal transportation equipment on the clearance side.
2 On haulage roads where trolley lines are used, the clearance
3 shall be on the side opposite the trolley lines. The
4 clearance space on all haulage roads shall be kept free of
5 loose rock, coal, supplies or other materials, provided that
6 not more than 30 inches need be kept free of such
7 obstructions.

8 (4) Ample clearance shall be provided at all points
9 where supplies are loaded or unloaded along haulage roads or
10 conveyors.

11 (b) Specifications for shelter holes.--

12 (1) (i) Shelter holes shall be provided on the
13 clearance side along designated travelways, which are
14 also used as haulage entries, other than belt conveyor
15 haulage entries.

16 (ii) Subparagraph (i) shall not apply to face area
17 or room haulageways.

18 (2) Shelter holes shall be spaced not more than 105 feet
19 apart unless otherwise approved by the department. Shelter
20 holes shall be at least five feet in depth, not more than
21 four feet in width, level with the roadway and at least four
22 feet in height.

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

26 (4) Shelter holes shall be kept clear of refuse and
27 other obstructions.

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

30 Section 255. Underground haulage equipment.

1 (a) Maintenance.--Underground haulage equipment shall be
2 maintained in a safe operating condition. An audible warning
3 device and headlights shall be provided on each locomotive and
4 each shuttle car. Rerailing devices shall be provided on all
5 locomotives.

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

10 Section 256. Operation of haulage equipment.

11 (a) Duties of motormen and trip riders.--Motormen and trip
12 riders shall:

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

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

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

19 (b) Prohibitions.--

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

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

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

26 (4) No person shall fly or run switches or ride on the
27 front bumper of a car. Back poling shall be permitted only to
28 the nearest turning point or when going up extremely steep
29 grades and then only cautiously and at slow speed. The
30 operator of a shuttle car shall face in the direction of

1 travel except during the loading operation when he may face
2 the loading machine.

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

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

9 (2) Inspect locomotives and report any mechanical
10 defects found to the proper mine official prior to operation.
11 The locomotive may not be operated until the defects are
12 corrected.

13 (3) If there is reason to leave a trip, see that the
14 trip is left in a safe place, secure from cars, locomotives
15 or other dangers and where it will not endanger the operators
16 of other trips or other persons.

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

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

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

29 (b) Duties of hooker-on.--The hooker-on at the bottom of any
30 slope shall see that cars are properly coupled to a rope or

1 chain and that the safety catch or other device is properly
2 attached to the rear car before giving the signal to the
3 hoisting operator. The hooker-on shall not allow any person to
4 ride up the slope other than the trip rider.

5 Section 258. Transportation of individuals.

6 (a) General rule.--The speed of mantrips shall be governed
7 by the mine foreman, and mantrips shall be operated at safe
8 speeds consistent with the condition of roads and type of
9 equipment used. Each mantrip shall be under the charge of a
10 competent person designated by the mine foreman or the assistant
11 mine foreman and operated independently of any loaded trip of
12 coal or other heavy material, but may transport tools, small
13 machine parts and supplies.

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

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

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

20 (c) Adequate clearance and proper illumination.--Adequate
21 clearance and proper illumination shall be provided where
22 individuals load or unload mantrips.

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

26 Section 259. Conveyor belts and conveyor equipment.

27 (a) Specifications.--

28 (1) Except as otherwise provided under paragraph (2),
29 all conveyor entries shall be provided with a minimum width
30 and height of not less than four feet for travel and, in

1 conveyor entries in which track is installed, the minimum
2 amount of clearance width shall not be less than two and one-
3 half feet, which clearance width shall be continuous
4 throughout the entry.

5 (2) In lieu of maintaining four feet of height in
6 conveyor entries, a minimum height of three feet and a
7 minimum width of four feet may be maintained, provided the
8 operator furnishes a mode of conveyance for men and material
9 other than on the conveyor. All such travel space and
10 clearance space shall be kept free of all forms of
11 obstruction underfoot and from electric wires and electric
12 cables. A space of not less than four feet in width shall be
13 provided for travel from the immediate entrance of each
14 working place to the face thereof, which space shall be kept
15 free of all forms of obstruction underfoot and free from
16 electric wires and electric cables.

17 (b) Cross points.--At all points where individuals must of
18 necessity cross conveyors, the conveyor at the point where the
19 crossing is made shall be so arranged that individuals can cross
20 safely and conveniently without coming into contact with the
21 conveyor.

22 (c) Automatic stop control.--Conveyors shall be equipped
23 with an automatic control that will stop the driving motor in
24 case of slipping on the drive pulley, and the control shall be
25 tested each operating shift to ascertain that it is in good
26 operating condition.

27 (d) Electric wires and cables.--All electric wires or
28 electric cables in completed portions of conveyor entries shall
29 be carried on insulators.

30 (e) Control lines.--Control lines shall be installed the

1 full length of the belt.

2 (g) Point type heat sensors.--Point type heat sensors shall
3 not be used as the primary type of fire sensors in any mine
4 opened more than six months after the effective date of this
5 section.

6 Section 260. Blowtorches and fuel.

7 No blowtorch may be used in a mine.

8 Section 261. Oxygen and gas containers.

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

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

15 Section 262. Transportation of oxygen and gas.

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

21 (b) Marking of empty tanks and cylinders.--Empty oxygen and
22 gas tanks or cylinders shall be marked "empty" and shall be
23 removed from the mine promptly in proper containers. The valve
24 protection caps shall be placed on all tanks or cylinders for
25 which caps are provided when not in use and when being
26 transported. No oxygen and gas tanks or cylinders shall be
27 transported with the hoses and gauges attached.

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

30 Section 263. Storage of oxygen and gas.

1 (a) General rule.--All oxygen and gas tanks or cylinders
2 shall be properly secured and protected against possible damage
3 when stored in and about bituminous coal mines. When oxygen and
4 gas tanks or cylinders are stored in underground shops or
5 surface structures, they shall be protected from damage by
6 falling material and secured in an upright position. Not more
7 than a one-week supply of oxygen or gas shall be stored in any
8 underground or surface shop. This quantity shall be determined
9 in agreement with the department.

10 (b) Valves and hoses.--The valves on oxygen and gas tanks or
11 cylinders shall be closed. The hoses shall be removed when not
12 in actual use, except in a properly ventilated and protected
13 underground machine shop or surface structure. Valves on empty
14 tanks or cylinders shall be kept closed.

15 Section 264. Use of oxygen and gas.

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

18 (b) Training and clothing.--A person assigned to use and
19 work with oxygen or gas shall be properly trained and skilled in
20 its use and shall be fully conversant with the danger of its
21 misuse. Any person using oxygen or gas in and about a bituminous
22 coal mine shall be provided with goggles or shields, and the
23 clothing of such person shall be reasonably free of oil and
24 grease.

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

29 (d) Maintenance.--The oxygen or gas hose lines, gauges and
30 similar equipment shall be maintained in safe operating

1 condition. Defective tanks, cylinders, gauges, hose lines,
2 torches and similar equipment shall be taken out of service upon
3 discovery and shall not be put into use until corrected and made
4 safe.

5 (e) Multiple units permitted.--

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

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

14 (f) Pressure.--Neither oxygen nor gas shall be used under
15 direct pressure from tanks or cylinders but must be used under
16 reduced pressure not exceeding pressures recommended by the
17 manufacturer of the oxygen or gas.

18 (g) Working sections.--Oxygen or gas cutting, burning or
19 welding shall be done in fresh intake air only in working
20 sections. The area where the work is to be done shall be
21 examined by a mine official before, during and after the welding
22 or burning to assure that no fire or other danger exists. In the
23 event the equipment to be repaired cannot be removed from the
24 face area to outby the last open crosscut, the following shall
25 be satisfied:

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

28 (2) An approved gas detection device shall be used by a
29 mine official for gas detection during the cutting and
30 welding operation.

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

4 (h) Safety requirements.--

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

11 (2) Neither oxygen nor gas shall be used near oil,
12 grease or fine coal dust unless the oil, grease or fine coal
13 dust is adequately cleaned or made inert by the use of rock
14 dust or the area where the work is to be done is thoroughly
15 wetted.

16 (i) Intake air activity.--Oxygen or gas cutting, burning or
17 welding shall be done in intake air only. Underground shops
18 where oxygen gas burning occurs shall be on a separate split of
19 air.

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

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

28 (l) Manifolding cylinders.--The practice known as
29 "manifolding cylinders" shall be permitted if the installation
30 is solidly grounded and operation thereof is in accordance with

1 recognized safe procedures.

2 (m) Protection from power lines.--Oxygen and gas tanks or
3 cylinders shall be protected from power lines or energized
4 electrical machinery or equipment, and such tanks or cylinders
5 shall be kept away from the place where the cutting is being
6 done in order to prevent damage or accident and to prevent heat
7 from affecting such tanks or cylinders.

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

9 It shall be the duty of each operator, superintendent, mine
10 foreman, assistant mine foreman and mine examiners and other
11 officials to comply with and to see that others comply with the
12 provisions of this act. It shall be the duty of all employees to
13 comply with this act and to cooperate with management and the
14 department in carrying out its provisions. Reasonable rules and
15 regulations of an operator for the protection of employees and
16 preservation of property that are in harmony with the provisions
17 of this act and other applicable laws shall be complied with.

18 Section 266. Protective clothing.

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

23 (b) Snug-fitting clothing.--Employees engaged in haulage
24 operations and all other persons employed around moving
25 equipment on the surface and underground shall wear snug-fitting
26 clothing.

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

30 (d) Protective hats.--All persons shall wear protective hats

1 while underground and while on the surface where falling objects
2 may cause injury.

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

6 Section 267. Checking systems.

7 Each bituminous coal mine shall have a check-in and check-out
8 system that will provide positive identification upon the person
9 of every individual underground. An accurate record of the
10 individuals in the mine, which shall consist of a written
11 record, a check board, a time clock record or another approved
12 method shall be kept on the surface in a place that will not be
13 affected in the event of an emergency. The record shall bear a
14 number or name identical to the identification check carried by
15 or fastened to the belt of all persons going underground.

16 Section 268. Prohibitions regarding endangering security of
17 mine.

18 (a) Prohibitions regarding ventilation.--No miner, worker or
19 other person shall knowingly damage, obstruct or remove any
20 shaft, lamp, instrument, air course or other equipment, obstruct
21 or disrupt any portion of the mine's ventilation, carry open
22 lights, open a door closed for directing ventilation and not
23 close it again or enter any part of a mine that has been
24 endangered off. No person shall deface, pull down or destroy any
25 notice boards, record books or mine maps.

26 (b) Smoking prohibition.--Open lights, smoking and smokers'
27 articles, including matches, are prohibited in bituminous coal
28 mines. No person shall at any time enter a mine with or carry
29 into the mine any matches, pipes, cigars, cigarettes or any
30 device for making lights or fire not approved. In all mines the

1 operator may search or cause to be searched any person,
2 including his clothing and material belongings, entering or
3 about to enter the mine, or inside the mine, to prevent such
4 person from taking or carrying into the mine any of the articles
5 prohibited by this subsection.

6 (c) Intoxicated persons.--No person under the influence of
7 alcohol or a controlled substance shall enter into or loiter
8 about any mine. No person shall have in his possession alcohol
9 or controlled substances while in or about the mine premises.
10 This provision shall not apply to the use of medication as
11 prescribed for that person.

12 Section 269. Responsibility for care and maintenance of
13 equipment.

14 Equipment operators shall exercise reasonable care in the
15 operation of the equipment entrusted to them and shall promptly
16 report defects known to them.

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

18 Individuals exposed for short periods to gas, dust, fume and
19 mist inhalation hazards shall wear approved respiratory
20 equipment. When exposure is for prolonged periods, dust shall be
21 controlled by the use of approved dust collectors or by water or
22 other approved methods.

23 Section 271. Safeguards for mechanical equipment.

24 (a) Locking.--The cutting devices of mining machines shall
25 be locked securely by mechanical means or electrical interlocks
26 while the machines are parked or being trammed. Loading machines
27 shall not be trammed with loading arms in motion except when
28 loading materials.

29 (b) Guarding.--Belt chain or rope drives and the moving
30 parts of machinery which are within seven feet of the floor,

1 ground or platform level, unless isolated, shall be guarded
2 adequately. Repair pits shall be kept covered or guarded at all
3 times when not in use. Machinery shall not be lubricated or
4 repaired while in motion, except where safe remote lubricating
5 devices are used. Machinery shall not be started until the
6 person lubricating or repairing it has given a clear signal.
7 Guards that have been removed shall be replaced before the
8 machinery is again put into use. Provision shall be made to
9 prevent accumulation of spilled lubricants.

10 (c) Grinders.--Mechanically operated grinding wheels shall
11 be equipped with safety washers and substantial retaining hoods
12 covering two-thirds of the circumference of the wheel, and
13 goggles or eye shields shall be used. Where stationary grinders
14 are used, a tool rest shall be provided and the clearance
15 between the wheel and tool rest shall not exceed one thirty-
16 second of an inch.

17 Section 272. First aid equipment.

18 In every bituminous coal mine where individuals are employed
19 underground and in every active section of the mine, it shall be
20 the duty of the operator or superintendent of the mine to keep
21 on hand properly constructed stretchers, woolen and waterproof
22 blankets and all requisites for use in case of emergency. No
23 first aid material shall be removed or diverted without
24 authorization, except in case of accident in or about the mine.
25 It shall be the duty of the operator or superintendent to have
26 adequate ambulance service available promptly in the event of
27 injury to any employee.

28 Section 273. Fire protection.

29 (a) Firefighting equipment.--Each mine shall be provided
30 with suitable firefighting equipment adapted for the size and

1 conditions of the mine.

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

4 (1) Waterlines shall be capable of delivering 50 gallons
5 of water per minute at a nozzle pressure of 50 pounds per
6 square inch.

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

12 (3) A portable chemical car shall carry enough chemicals
13 to provide a fire extinguishing capacity equivalent to that
14 of a portable water car.

15 (4) A portable foam-generating machine or device shall
16 have facilities and equipment for supplying the machine with
17 30 gallons of water per minute at 30 pounds per square inch
18 for a period of 35 minutes.

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

20 (i) A multipurpose dry chemical type containing a
21 nominal weight of five pounds of dry powder and enough
22 expellant to apply the powder.

23 (ii) A foam-producing type containing at least 2.5
24 gallons of foam-producing liquids and enough expellant to
25 supply the foam.

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

1 (7) The fire hose shall be lined with a flame-resistant
2 material. The cover shall be polyester or other material with
3 flame-spread qualities and mildew resistance equal or
4 superior to polyester. The bursting pressure shall be at
5 least four times the water pressure at the valve to the hose
6 inlet with the valve closed, and the maximum water pressure
7 in the hose nozzle shall not exceed 100 pounds per square
8 inch.

9 (c) Working sections.--

10 (1) Each working section of a mine producing 300 tons or
11 more per shift shall be provided with two portable fire
12 extinguishers and 240 pounds of rock dust in bags or other
13 suitable containers. Water lines shall extend to each section
14 loading point and be equipped with enough fire hose to reach
15 each working face unless the section loading point is
16 provided with one of the following:

17 (i) two portable water cars;

18 (ii) two portable chemical cars; or

19 (iii) one portable water car or one portable
20 chemical car, and either:

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

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

25 (2) Each working section of a mine producing less than
26 300 tons of coal per shift shall be provided with:

27 (i) Two portable fire extinguishers.

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

30 (iii) At least 500 gallons of water and at least

1 three pails of ten-quart capacity. In lieu of the 500-
2 gallon water supply, a water line with sufficient hose to
3 reach the working places, a portable water car with a
4 500-gallon capacity or a portable all-purpose dry powder
5 chemical car of at least 125 pounds capacity may be
6 provided.

7 (d) Belt conveyors.--In all mines, water lines shall be
8 installed parallel to the entire length of belt conveyors and
9 shall be equipped with fire hose outlets with valves at 300-foot
10 intervals along each belt conveyor and at tailpieces. At least
11 500 feet of fire hose with fittings suitable for connection with
12 each belt conveyor water line system shall be stored at
13 strategic locations along the belt conveyor. Water lines may be
14 installed in entries adjacent to the conveyor entry belt as long
15 as the outlets project into the belt conveyor entry.

16 (e) Haulage tracks.--

17 (1) In a mine producing 300 tons of coal or more per
18 shift, water lines shall be installed parallel to all haulage
19 tracks using mechanized equipment in the track or adjacent
20 entry and shall extend to the loading point of each working
21 section. Water lines shall be equipped with outlet valves at
22 intervals of not more than 500 feet, and 500 feet of fire
23 hose with fittings suitable for connection with such water
24 lines shall be provided at strategic locations. Two portable
25 water cars, readily available, may be used in lieu of water
26 lines prescribed under this paragraph.

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

30 (i) a tank of water of at least 55-gallon capacity

1 with at least three pails of not less than ten-quart
2 capacity; or

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

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

7 (g) Electrical installations.--

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

12 (2) One portable fire extinguisher and 240 pounds of
13 rock dust shall be provided at each temporary electrical
14 installation.

15 (h) Oil storage stations.--Two portable fire extinguishers
16 and 240 pounds of rock dust shall be provided at each permanent
17 underground oil storage station. One portable fire extinguisher
18 shall be provided at each working section where 25 gallons or
19 more of oil is stored in addition to extinguishers required
20 under subsection (c).

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

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

29 (k) Emergency materials.--

30 (1) At a mine producing 300 tons of coal or more per

1 shift, there shall be readily available the following
2 materials at locations not exceeding two miles from each
3 working section:

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

5 (ii) Two rolls of brattice cloth.

6 (iii) Two handsaws.

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

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

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

10 (vii) Three claw hammers.

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

13 (ix) Five tons of rock dust.

14 (2) At a mine producing less than 300 tons of coal per
15 shift, the materials set forth in this subsection shall be
16 available at the mine, provided, however, that the emergency
17 materials for one or more mines may be stored at a central
18 warehouse or building supply company and the supply must be
19 the equivalent of that required for all mines involved and
20 within an hour's delivery time from each mine. This exception
21 shall not apply where the active working sections are more
22 than two miles from the surface.

23 (1) Condition and examination of firefighting equipment.--

24 All firefighting equipment shall be maintained in a usable and
25 operative condition. Chemical extinguishers shall be examined
26 every six months, and the date of the examination shall be
27 written on a permanent tag attached to the extinguisher.

28 (m) Branch lines.--As a part of the deluge-type water spray
29 system, two or more branch lines of nozzles shall be installed.

30 The maximum distance between nozzles shall not exceed eight

1 feet.

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

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

6 (2) Foam generator systems shall be equipped with a fire
7 sensor which actuates the system, and each system shall be
8 capable of producing and delivering the following amounts of
9 foam within five minutes:

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

14 (ii) At non-fire-resistant belt installations, an
15 amount which will fully envelop the belt drive, belt
16 take-up electrical controls, gear-reducing unit and
17 conveyor belt over a distance of 150 feet.

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

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

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

27 (o) Water sprinkler systems.--Water sprinkler systems may be
28 installed to protect main and secondary belt-conveyor drives,
29 however, where such systems are employed, they shall be
30 installed and maintained in accordance with subsections (p),

1 (q), (r), (s) and (t).

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

3 (1) The fire-control components of each water sprinkler
4 system shall be installed, as far as practicable, in
5 accordance with the recommendations set forth in the National
6 Fire Protection Association, Code No. 13, entitled
7 "Installation of Sprinkler Systems," in effect at the time of
8 installation, and such systems' components shall be of a type
9 approved by the Underwriters Laboratories, Inc., Factory
10 Mutual Research Corporation.

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

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

18 (q) Arrangement of sprinklers.--

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

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

28 (3) The water discharge rate from the sprinkler system
29 shall not be less than .25 gallon per minute per square foot
30 of the top surface of the top belt, and the discharge shall

1 be directed at both the upper and bottom surfaces of the top
2 belt and to the upper surface of the bottom belt. The supply
3 of water shall be adequate to provide a constant flow of
4 water for ten minutes with all sprinklers functioning.

5 (4) Each individual sprinkler shall be activated at a
6 temperature of not less than 150 degrees Fahrenheit and not
7 more than 300 degrees Fahrenheit.

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

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

13 (s) Fire warning devices at belt drives.--Each water
14 sprinkler system shall be equipped with a device designed to
15 stop the belt drive in the event of a rise in temperature, and
16 each warning device shall be capable of giving both an audible
17 and visual warning when a fire occurs.

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

21 (u) Equivalent dry-pipe system.--Where water sprinkler
22 systems are installed to protect main and secondary belt
23 conveyor drives and freezing temperatures prevail, an equivalent
24 dry-pipe system may be installed.

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

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

2 (1) Self-contained dry-powder chemical systems shall be
3 installed to protect each beltdrive, belt take-up, electrical
4 controls, gear-reducing units and 50 feet of fire-resistant
5 belt or 150 feet of non-fire-resistant belt adjacent to the
6 belt drive.

7 (2) The fire control components of each dry-powder
8 chemical system shall be a type approved by the Underwriters
9 Laboratories, Inc., or Factory Mutual Engineering
10 Corporation.

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

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

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

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

21 (3) Hose shall be protected by wire braid or its
22 equivalent.

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

26 (5) Each belt shall be protected on the top surface of
27 both the top and bottom belts and the bottom surface of the
28 top belt.

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

30 (1) Each self-contained dry-powder chemical system shall

1 be equipped with sensing devices which shall be designed to
2 activate the fire control system, sound an alarm and stop the
3 conveyor drive motor in the event of a rise in temperature,
4 and provision shall be made to minimize contamination of the
5 lens of any optical sensing device installed in the system.

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

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

12 (4) Each fire suppression system shall be equipped with
13 a manually operated control valve which shall be independent
14 of the sensor.

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

18 (1) One hundred and twenty-five pounds of dry powder for
19 fire resistant belts.

20 (2) Two hundred and twenty-five pounds of dry powder for
21 non-fire-resistant belts.

22 (aa) Nozzles, flow rate and direction.--The nozzles of each
23 dry-powder chemical system shall be capable of discharging all
24 powder within one minute after actuation of the system, and such
25 nozzles shall be directed so as to minimize the effect of
26 ventilation upon fire control.

27 (bb) Safeguards for dry-powder chemical systems.--Adequate
28 guards shall be provided along all belt conveyors in the
29 vicinity of each dry-powder chemical system to protect persons
30 whose vision is restricted by a discharge of powder from the

1 system. Handrails shall be installed in these areas to provide
2 assistance to those passing along the conveyor after a powder
3 discharge.

4 (cc) Backup water system.--One fire hose outlet, together
5 with a length of hose capable of extending to the belt drive,
6 shall be provided within 300 feet of each belt drive.

7 (dd) Inspection of dry-powder chemical systems.--

8 (1) Each dry-powder chemical system shall be examined
9 weekly, and a functional test of the complete system shall be
10 conducted at least once each year.

11 (2) Where the dry-powder chemical system has been
12 actuated, all components of the system shall be cleaned
13 immediately by flushing all powder from pipes and hoses, and
14 all hose damaged by fire shall be replaced.

15 Section 274. Mine openings or outlets.

16 (a) Mine openings or outlets.--It shall be unlawful for the
17 operator, superintendent or mine foreman of a mine to employ any
18 person to work in the mine unless there are two openings or
19 outlets to the surface from every seam of coal being worked, and
20 available from every seam of coal entry, which openings or
21 outlets shall have distinct means of ingress and egress
22 available at all times for the use by the employees. The two
23 openings to the surface required by this section shall not be at
24 a common shaft, slope, or drift opening, except that multiple
25 compartment shafts or slopes separated by substantially
26 constructed walls of noncombustible material shall be considered
27 as two separate and distinct openings. The distance between two
28 shafts shall not be less than 200 feet, the distance between the
29 openings to the surface of slopes shall not be less than 150
30 feet and the distance between drifts shall not be less than 50

1 feet, provided that the distance between the openings shall
2 apply only to mines opened after the effective date of this act.
3 The distances specified may be less with the written consent of
4 the department. The passageways between the two shafts shall at
5 all times be maintained in safe and available condition for the
6 employees to travel, and the pillars in entries between the
7 shafts shall not be removed without the approval of the
8 department.

9 (b) Openings.--The requirements of subsection (a) shall not
10 apply to the openings of a new mine, or to the openings of a new
11 entry of an existing mine, that is being worked for the purpose
12 of making connection between the two outlets, as long as not
13 more than 20 persons are employed at any one time in making the
14 connection or driving the second opening. The requirements of
15 subsection (a) shall apply to any mine in which the second
16 opening has been rendered unavailable by reason of the final
17 robbing or removing of pillars, as long as not more than 20
18 persons are employed in the mine at any one time.

19 (c) Safe egress.--Safe means of egress shall be available at
20 all times for the persons employed in a mine that has no second
21 outlet available.

22 (d) Entries.--Every mine shall have at least five main
23 entries, two of which shall lead from the main opening and two
24 of which shall lead from the second opening into the body of the
25 mine. The fifth, which may be connected with an opening to the
26 surface or with the intake airway at or near the main intake
27 opening, shall be used exclusively as a travelingway for the
28 employees.

29 (e) Intake and return entries.--The intake and return
30 entries shall be kept reasonably drained and reasonably free

1 from refuse and obstructions of all kinds, so that persons may
2 safely travel throughout their whole length and have a safe
3 means of egress from workings in case of emergency. The entries
4 shall be separated by pillars of coal of sufficient strength.
5 When the coal seam height is less than four and one-half feet,
6 employees shall be provided a means of transportation in and out
7 of the mine.

8 (f) Passageway between workings.--In every slope with
9 workings on both sides, an overpass or underpass not less than
10 five feet wide and five feet high shall be provided as a
11 passageway for the use of employees to cross from one side of
12 the slope to the other. The overpass or underpass shall connect
13 with available passageways leading to the workings on both sides
14 of the slope. The intervening strata between the slope and the
15 overpass or underpass shall be of sufficient strength at all
16 points to insure safety to the employees, provided, however,
17 that if it is impracticable to drive an overpass or an underpass
18 in the solid, an overpass or underpass, if substantially built
19 with masonry or other incombustible material, will be deemed
20 sufficient.

21 (g) Shafts less than 100 feet deep.--If the opening or
22 outlet other than the main opening is a shaft not more than 100
23 feet in depth and is used by employees for the purpose of
24 ingress to or egress from the mine, it shall be kept available
25 and in safe condition, ~~certified~~ free from dangerous gases and ←
26 all obstruction, and shall be fitted with safe and convenient
27 stairways, with steps of an average tread of ten inches and a
28 rise of nine inches, not less than two feet in width and not to
29 exceed an angle of 45 degrees, and with landings not less than
30 24 inches in width and four feet in length, at easy and

1 convenient distances. Stairways shall be made safe by having
2 handrails of suitable material placed on one side, or on both
3 sides when requested by the department, and shall be inspected
4 every 24 hours by a certified mine official employed for that
5 purpose. Water that may come from the surface or from the strata
6 in the shaft shall be conducted away so it will not fall on the
7 stairways or on persons while descending or ascending them.

8 (h) Shafts more than 100 feet deep.--When a mine is operated
9 by a shaft more than 100 feet in depth, the persons employed in
10 the shaft shall be lowered and hoisted by means of machinery
11 unless the second opening is a drift or a slope. When the
12 employees are lowered into or hoisted from the mine at the main
13 shaft opening, the second opening, if a shaft, shall be supplied
14 with a stairway, constructed in the manner designated in this
15 section or with suitable machinery for safely lowering and
16 hoisting persons in case of an emergency.

17 (i) Slope openings.--At any mine where one of the openings
18 required is a slope and is used as a means of ingress and egress
19 by the employees, and where the angle of descent of the slope
20 exceeds 15 degrees and its length from the mouth of the opening
21 exceeds 1,000 feet, the employees shall be lowered into and
22 hoisted from the mine at a speed not to exceed six miles per
23 hour. At any mine where the angle of descent of the slope
24 averages from five to 15 degrees and its length exceeds 3,000
25 feet, the employees shall be lowered into and hoisted from the
26 mine at a speed not to exceed six miles per hour, provided,
27 however, that when a separate travelingway is provided at any
28 such slope, the owner or operator may, at the owner's or
29 operator's option, be exempt from the requirements of this
30 section if the angle of the travelingway does not exceed 20

1 degrees.

2 Section 275. Mining close to abandoned workings.

3 The superintendent shall not permit the mining of coal in any
4 seam the entire distance to a permit boundary, not including
5 boundaries around reservations or along crop lines, when on the
6 adjoining property there are mine workings in the seam within
7 3,000 feet of the permit boundary. A barrier pillar shall be
8 left, from the operation to the permit boundary, of not less
9 than ten feet plus two feet for every foot or part of a foot of
10 thickness of the bed measured from the roof to the floor, plus
11 five feet for each 100 feet or part of 100 feet of cover over
12 the bed at the permit boundary. If the coal on one side of the
13 permit boundary has been mined, prior to the effective date of
14 this section, closer to the permit boundary than permitted, the
15 barrier pillar to be left in the mine approaching the permit
16 boundary shall be at least equal, when added to that already
17 left in the adjoining mine, to that required on both sides of
18 the permit boundary. If, in the opinion of the department or the
19 superintendent of either mining property, the barrier pillar is
20 deemed insufficient, after due notice to the operator of the
21 adjoining mining property, one-half of the barrier pillar shall
22 be left on each side of the permit boundary, except as provided
23 in this section. The department, the superintendent or owner of
24 either mining property shall determine the thickness necessary
25 to afford safety and protection. If it is agreed by the
26 department and superintendents of the adjoining coal mining
27 properties that the permit boundary is so located that there is
28 no danger to property or lives in mining coal on either or both
29 sides of the permit boundary up to the permit boundary, then
30 mining to the permit boundary shall be lawful if all danger from

1 accumulated water and gas shall have first been removed by
2 driving a passageway to tap and drain off any accumulations of
3 water and gas, as provided for in this act.

4 Section 276. Lubrication and storage of flammable lubricants.

5 The oiling or greasing of any cars inside any mine is
6 strictly prohibited unless the place where the oil or grease is
7 used is thoroughly cleaned at least once a day to prevent the
8 accumulation of waste oil or grease. Not more than two days'
9 supply of flammable oil or lubricant shall be stored in any
10 portion of a mine unless it is kept in a fireproof building or a
11 structure cut out of solid rock. Oil or grease stored in the
12 face area shall be kept in approved containers and away from
13 power wires and electric equipment. Accumulations of spilled oil
14 or grease shall be rendered harmless. Excessive accumulations
15 shall be removed from the mine. Closed metal containers shall be
16 provided for the storage of oily rags or waste until removed for
17 disposal. If any flammable oil or lubricants are stored
18 underground, all reasonable safety practices shall be observed
19 in order to minimize any dangers of fire.

20 Section 277. Approved lighting and gas detection devices in
21 mines.

22 (a) Lighting.--It shall be unlawful to use open lights in
23 mines, and only approved electric cap lamps, approved
24 flashlights, approved safety lamps and other approved lighting
25 equipment shall be used in mines.

26 (b) Gas detection devices.--All approved gas detection
27 devices used for examining mines shall be in the care of the
28 mine foreman or some other competent person appointed by the
29 mine foreman, who shall have a duty to examine, test and deliver
30 them in a safe condition to the individuals when entering the

1 mine and to receive gas detection devices from the individuals
2 when returning from work.

3 (c) Number of devices.--At every mine, a sufficient number
4 of approved gas detection devices shall be kept in good
5 condition for use in case of emergency.

6 (d) Entrusting of devices.--No approved gas detection
7 devices shall be entrusted to any person for use in a mine until
8 the person has given satisfactory evidence to the mine foreman
9 that he understands the proper use of the gas detection device
10 and the danger of tampering with the device.

11 (e) Duty to return device.--It shall be the duty of every
12 person who knows their approved gas detection device is
13 defective to return it immediately to a mine official.

14 Section 278. Unauthorized entry into mine.

15 Any person who enters a mine without authorization from the
16 superintendent commits a misdemeanor of the second degree. This
17 section shall not be applicable to any person who enters a mine
18 in the performance of any duty imposed upon him by this act.

19 Section 279. Passing by or removing danger signals.

20 Except as specifically authorized in this act, no employee or
21 other person shall pass by any danger signal into any mine, or
22 into any portion of any mine, or remove any danger signal before
23 the mine or portion of the mine has been examined and reported
24 to be safe. Any employee or other person shall not pass by any
25 danger signal placed at the entrance to a working place, or any
26 other place in the mine, or remove the danger signal without
27 permission from the mine foreman, the assistant mine foreman or
28 the mine examiner.

29 Section 280. Miners to remain in work areas.

30 Each miner shall remain during working hours in the work area

1 assigned by the mine foreman or the assistant mine foreman.

2 Section 281. Sealing openings.

3 (a) Permanently abandoned shafts.--Every shaft permanently
4 abandoned and taken out of service shall be filled for a
5 distance of 25 feet with incombustible material.

6 (b) Out of service openings.--Every slope, drift or tunnel
7 permanently taken out of service shall be filled for a distance
8 of 25 feet with incombustible material.

9 (c) Drillholes and boreholes.--All drillholes and boreholes
10 permanently taken out of service after the effective date of
11 this act shall be effectively plugged or sealed.

12 (d) Openings available for future use.--Every shaft, slope,
13 drift or tunnel, temporarily taken out of service, which may be
14 used for future mining purposes shall be properly sealed or
15 fenced.

16 Section 282. Ladders in mines.

17 Permanently installed ladders in mines that are more than ten
18 feet in length and set on an angle of 60 degrees or more with
19 the horizontal shall be provided with substantial backguards,
20 and all ladders shall be maintained in good repair.

21 Section 283. Inside structures to be of incombustible
22 materials.

23 All buildings or structures in any bituminous coal mine shall
24 be constructed of incombustible materials.

25 Section 284. Washhouses.

26 It shall be the duty of the operator or superintendent of a
27 mine to provide a suitable building, convenient to the principal
28 entrance of the mine, for the use of employees of the mine to
29 wash and change clothes. The building shall be maintained in
30 good order and be properly lighted and heated, shall be provided

1 with hot and cold running water and facilities for persons to
2 wash and shall include adequate sanitary facilities. The cost of
3 providing and maintaining the conveniences and facilities shall
4 be defrayed by the owner or operator of mine.

5 CHAPTER 3

6 ELECTRICAL EQUIPMENT

7 Section 301. Duties of mine foreman and superintendent.

8 It shall be the duty of the mine foreman and superintendent
9 to see that the requirements of this chapter for the
10 installation and maintenance of electrical equipment are
11 observed in and around coal mines.

12 Section 302. Definitions.

13 As used in this chapter, the following words and terms shall
14 have the meanings given to them in this section unless the
15 context clearly indicates otherwise:

16 "Armored cable." A cable provided with a wrapping of metal,
17 usually steel wires or tapes, primarily for the purpose of
18 mechanical protection.

19 "Borehole cable." A cable designed for vertical suspension
20 in a borehole or shaft and is used for power circuits in a mine.

21 "Branch circuit." A tap taken off a main circuit.

22 "Cable sheath." A covering consisting of composition tapes,
23 compound jackets of natural or synthetic rubber, or
24 thermoplastic or fiber braids applied over the conductor
25 assembly and insulation of multiple conductor cables.

26 "Circuit breaker." A device which may be controlled by
27 relaying or protective equipment for interrupting a circuit
28 between separable contacts under normal or abnormal conditions.

29 "Delta-connected." A delta-connected power system is one in
30 which the windings of transformers or AC generators are

1 connected to form a triangular phase relationship, with the
2 phase conductors connected to each point of the triangle.

3 "Difference of potential." The difference of electrical
4 pressure or electromotive force existing between any two points
5 of an electrical system, or between any point of a system and
6 the earth, as determined by a voltmeter or other suitable
7 instrument.

8 "Effectively grounded." Grounded through a grounding
9 connection of sufficiently low impedance, inherent or
10 intentionally added, or both, so that fault grounds which may
11 occur cannot build up voltages in excess of limits established
12 for apparatus, circuits or systems so grounded.

13 "Electrical face equipment." Mobile or portable mining
14 machinery having electric motors or accessory equipment normally
15 installed or operated in by the last open crosscut in any entry
16 or room.

17 "Electric system." All electric equipment and circuits that
18 pertain to the operation of the mine and are under control of
19 the mine management.

20 "Explosion-proof or flame-proof." Casings or enclosures
21 which, when completely filled with a mixture of methane and air
22 and the same exploded, are capable of either entirely confining
23 the products of the explosion within the casing or discharging
24 them from the casing so that they cannot ignite a mixture of
25 methane and air, combined in proportions most sensitive to
26 ignition and entirely surrounding the points of discharge, and
27 in most intimate proximity with the points of discharge.

28 "Flame-resistant cable." A cable that meets the MSHA testing
29 requirements for flame resistance and has been assigned an
30 approval. A cable shall also be considered flame-resistant if it

1 meets the criteria for flame resistance by a nationally
2 recognized testing lab that is equivalent to the MSHA testing
3 criteria and that is appropriately identified. All flame-
4 resistant cables used underground shall have the approval number
5 embossed or indented on the jacket at intervals not to exceed 12
6 feet.

7 "Ground." A conducting connection, whether intentional or
8 accidental, between an electric circuit or equipment and earth
9 or to some conducting body which serves in place of the earth.

10 "Grounding conductor." A metallic conductor used to connect
11 the metal frame or enclosure of an equipment, device or wiring
12 system with an effective grounding medium.

13 "High voltage." Voltage higher than 1,000 volts nominal.

14 "Lightning arrestor." A protective device for limiting surge
15 voltages on equipment by discharging or bypassing surge current
16 and for preventing continued flow of current to ground.

17 "Low voltage." Voltage up to 660 volts nominal.

18 "Machine operator." A person who possesses a machine runners
19 certification and is placed in charge of a portable or mobile
20 face machine of any sort where a gas examination is required
21 under this act or regulations promulgated under this act.

22 "Medium voltage." Voltage from 661 to 1,000 volts nominal.

23 "Mine power center." A combined transformer and distribution
24 unit which may include a rectifier, complete within a metal
25 enclosure, from which one or more low-voltage, medium-voltage or
26 high-voltage power circuits are taken.

27 "Neutral." A neutral point of connection established through
28 the use of a grounding or zig-zag transformer with a normally
29 ungrounded delta power system.

30 "Neutral point." The connection point of transformer or

1 generator windings from which the voltage to ground is nominally
2 zero and is the point generally used for system grounding in a
3 wye-connected AC power system.

4 Nonmetallic armor." A tough outer covering or cable sheath
5 of rubber, rubber compound or thermoplastic designed to protect
6 the cable conductors and insulation from abrasion or other
7 damage from external sources.

8 "Portable trailing cable." A flexible cable or cord used for
9 connecting mobile, portable or stationary equipment in mines to
10 a trolley system or other external source of electric energy
11 where permanent mine wiring is prohibited or impracticable.

12 "Potential of a circuit." The voltage of a circuit machine
13 or any piece of electrical apparatus is the potential difference
14 normally existing between the conductors of such circuit or the
15 terminals of the machine or apparatus.

16 "Primary ground." A low impedance ground bed or system
17 consisting of several interconnected ground rods or buried
18 conducting mesh, or both, located near an outdoor substation and
19 used as a lightning arrestor or station ground or, separately,
20 as a basic ground for one conductor of a power transmission or
21 distribution system. A single ground rod of any length is not
22 considered a primary ground.

23 "Protection." Fuses or other suitable automatic circuit-
24 interrupting devices for preventing damage to circuits,
25 equipment and ~~abnormal personnel~~ PERSONNEL BY ABNORMAL ←
26 conditions, such as over-current, high or low voltage and single
27 phasing.

28 "Rectifiers." Alternating current to direct-current power
29 conversion devices of the mercury-arc, silicon, selenium or
30 other type.

1 "Shielded cable." A cable in which the insulated conductor is
2 covered with a conductive material for the purpose of clearing
3 ground faults.

4 "Voltage." The phase-to-phase or line-to-line root-mean-
5 square value assigned to a circuit or system for designation at <—
6 AS its voltage class. Actual voltage at which the circuit or <—
7 systems operated may vary from the normal voltage with a range,
8 which permits satisfactory operation of the equipment. The
9 difference of electrical pressure or electromotive force
10 existing between any two points of an electrical system, or
11 between any point of a system and earth, as determined by a volt
12 meter or other instrument. The term shall be synonymous WITH the <—
13 term potential and shall mean electrical pressure.

14 "Wye-connected." A system in which one end of each phase
15 winding of transformers or AC generators are connected together
16 to form a neutral point, and the other ends of the windings are
17 connected to the phase conductors.

18 "Zig-zag transformer." A three-phase transformer used to
19 provide a neutral point on delta systems and capable of carrying
20 continuously the maximum ground fault current of the system.

21 Section 303. Plan of electrical system.

22 A plan shall be kept at the mine showing the location of all
23 stationary electrical apparatuses in connection with the mine
24 electrical system, including permanent cables, conductors,
25 switches and trolley lines. The plan shall be of sufficient size
26 to show clearly the position of the apparatus, and the scale
27 shall not be less than 500 feet per inch. There shall be stated
28 on the plan the capacity in horsepower of each motor, and in
29 kilowatts of each generator, rectifier or transformer, and the
30 nature of its duty. The plans shall be corrected as often as may

1 be necessary to keep them up to date or at intervals not
2 exceeding six months.

3 Section 304. Protection against shock.

4 (a) Electrical work.--No electrical work shall be performed
5 on low-voltage, medium-voltage or high-voltage distribution
6 circuits or equipment except by a qualified person or by a
7 person trained to perform electrical work and to maintain
8 electrical equipment under the direct supervision of a qualified
9 person. Disconnecting devices shall be locked out and suitably
10 tagged by the persons who perform the work, except that in cases
11 where locking out is not possible, the devices shall be opened
12 and suitably tagged by such persons. Locks or tags shall be
13 removed only by the person who installed them or, if the persons
14 are unavailable, by persons authorized by the operator or the
15 operator's agent.

16 (b) Insulating materials.--Mats of rubber, insulated
17 platform or other suitable insulating materials shall be
18 provided at all stationary transformers, rectifiers, motors and
19 generators and their controls, except portable and mobile
20 equipment. Gloves or mats of rubber or other suitable insulating
21 material shall be provided by the operator and used by qualified
22 persons when energized parts of electrical apparatus have to be
23 handled for the purpose of adjustment.

24 Section 305. Restoration from shock.

25 Instruction shall be posted in every generating, transforming
26 and motor room and at the entrance to the mine containing
27 directions as to the restoration of persons suffering from
28 electric shock. All employees working in connection with
29 electrical apparatus shall be familiar with and competent to
30 carry out the instructions.

1 Section 306. Report of defective equipment.

2 In the event of a breakdown or damage or injury to any
3 portion of the electrical equipment in a mine, overheating, the
4 appearance of sparks or arcs outside enclosed casings or in the
5 event of any portion of the equipment not a part of the
6 electrical circuit becoming energized, the equipment shall be
7 disconnected from its source of power, the occurrence shall be
8 promptly reported to a mine official and the equipment shall not
9 be used again until necessary repairs are made.

10 Section 307. Damage or alteration to mine electrical system.

11 No person shall willfully damage or without authority alter
12 or make connections to any portion of a mine electrical system.

13 Section 308. Capacity.

14 All electrical apparatus and conductors shall be sufficient
15 in size and power for the work they may be called upon to do
16 and, as prescribed in this act, be efficiently covered or
17 safeguarded. The electrical apparatus and conductors shall be
18 installed, operated and maintained to reduce danger from
19 accidental shock or fire to the minimum and shall be constructed
20 and operated so that the rise in temperature caused by ordinary
21 operation will not injure the insulating materials. Where these
22 conditions are not met, affected equipment shall be removed from
23 service until corrective action is taken.

24 Section 309. Joints in conductors.

25 All joints in conductors shall be mechanically and
26 electrically efficient. Suitable connectors or screw clamps
27 shall be used. All joints in insulated wire shall, after the
28 joint is complete, be reinsulated to at least the same extent as
29 the remainder of the wire.

30 Section 310. Cables entering fittings.

1 The exposed ends of cables where they enter fittings of any
2 description shall be protected and finished off so that moisture
3 cannot enter the cable, or the insulating material, if of an
4 oily or viscous nature, leak. Where unarmored cables or wires
5 pass through metal frames or into boxes or motor casings, the
6 holes shall be substantially bushed with insulating bushings
7 and, where necessary or required, with gas-tight bushings which
8 cannot readily become displaced.

9 Section 311. Switches, fuses and circuit breakers.

10 (a) Construction.--Fuses and automatic circuit breakers
11 shall be constructed as to effectively interrupt the current on
12 short circuit or when the current through them exceeds a
13 predetermined value. Open type fuses shall be provided with
14 terminals. Circuit breakers shall be of adequate interrupting
15 capacity.

16 (b) Trip setting.--Circuit breakers used to protect feeder
17 circuits shall be set to trip when the current exceeds by more
18 than 50% of the rated capacity of the feeder. In case the feeder
19 is subjected to overloads sufficient to trip the circuit breaker
20 but of short duration, the circuit breaker may be equipped with
21 a device which will prevent its acting unless the overload
22 persists for period longer than ten seconds. Trip current shall
23 be indicated at the circuit breaker.

24 (c) Fuses.--Fuses shall be stamped or marked or shall have a
25 label attached indicating the maximum current which they are
26 intended to carry. Fuses shall only be adjusted or replaced by a
27 competent person authorized by the mine foreman.

28 (d) Protective fuses.--Fuses used to protect feeders shall
29 be a less current rating than the feeder.

30 (e) Incombustible base requirement.--All switches, circuit

1 breakers and fuses shall have incombustible bases.

2 Section 312. Lightning protection.

3 If the surface transmission lines of low voltage or medium
4 voltage from the generating station are overhead, there shall be
5 lightning arrestors installed at the generating station. If the
6 distance from the generating station to the point where the line
7 enters the mine is more than 500 feet, an additional arrestor
8 shall be installed at that point.

9 Section 313. Underground power supply.

10 (a) Ground detectors.--All underground systems of
11 distribution that are completely insulated from earth shall be
12 equipped with properly installed ground detectors of suitable
13 design which will trip the circuit breaker when a ground fault
14 is detected. The ground detectors shall be maintained in working
15 condition.

16 (b) Protection of circuits leading underground.--

17 (1) In every completely insulated feeder circuit in
18 excess of 25 kilowatts capacity, leading underground and
19 operating at a potential not exceeding the limits of medium
20 voltage, there shall be provided above ground a circuit
21 breaker arranged to open simultaneously each ungrounded
22 conductor. In addition, a positive disconnect means shall be
23 installed outby the circuit breaker. Overload protection
24 shall be provided to open the circuit breaker in case of
25 overload on any conductor. Fuses may be substituted for
26 circuit breakers in circuits transmitting 25 kilowatts or
27 less. Each power circuit in excess of 50 kilowatts leading
28 underground shall be provided with a suitable ammeter.

29 (2) Every alternating current feeder circuit leading
30 underground and operating at a potential exceeding the limits

1 of medium voltage shall be provided above ground with a
2 suitable circuit breaker. The breaker shall be equipped with
3 automatic overload trip, arranged to open simultaneously each
4 ungrounded power-carrying conductor. Each circuit shall also
5 be provided with a suitable ammeter.

6 (c) Cables in shafts, slopes and boreholes.--

7 (1) All cables passing underground through inclines,
8 boreholes and shafts shall be installed in a manner that will
9 prevent undue strain in the sheath, insulation or conductors
10 and damage by chafing of cables against each other or against
11 the borehole casing or shaft. All ungrounded power conductors
12 in shafts, boreholes and inclines shall be covered with
13 suitable insulating materials and installed to provide a
14 minimum tensile factor of safety of five. Conductors shall be
15 securely fastened and properly supported out of contact with
16 combustible materials. When the weight, length and
17 construction of a cable are such that suspension from its
18 upper end only would subject the cable to possible damage, it
19 shall be supported at intervals necessary to prevent undue
20 strains in the sheath, insulation and conductors and to
21 provide a minimum tensile factor of safety of five. Adequate
22 protection shall be provided so that no damage can result
23 from water, electrolysis, moving cages, skips, ice, coal or
24 other falling or moving materials.

25 (2) Installation of direct-current and alternating-
26 current cables carrying in excess of 25 kilowatts in the same
27 borehole shall require approval of the department.

28 (d) High-voltage underground transmission systems.--

29 (1) High-voltage conductors or cables leading
30 underground and extending underground shall be of the flame-

1 resistant type with either a rubber, plastic or armor sheath
2 meeting the requirements of the department for flame
3 resistance. When the cable is fed by high-voltage systems
4 other than that described in this chapter, it shall be either
5 metallic armored, installed in rigid steel conduit or buried
6 one foot below combustible material. When circuit and
7 protective requirements are met, the cable construction and
8 method of installation may be that described in this chapter.
9 Cables shall be adequate for the intended current and
10 voltage. Splices made in cable shall provide continuity of
11 all components and shall be made in accordance with cable
12 manufacturers' recommendations. A competent person designated
13 by the mine electrician shall supervise the making of the
14 splices.

15 (e) Braid covered cable.--

16 (1) No power wires or cables having what is commonly
17 termed as weatherproof insulation or insulation consisting of
18 braided covering, which is susceptible to moisture absorption
19 from the outer surface to the conductor, shall be installed
20 in a mine.

21 (2) All insulated power cables purchased for use in a
22 mine shall be protected by a flame-resistant jacket and
23 assigned an approval number unless either armored or
24 installed in rigid steel conduit, a metal enclosure or a
25 fireproof room.

26 (f) Ventilation.--

27 (1) Bare power conductors shall not be installed in an
28 air current that has passed through or by the first working
29 place in the air split.

30 (2) High-voltage transmission cable, high-voltage motors

1 and high-voltage transformers shall not be installed in any
2 air current that has passed through or by the first working
3 place in the air split.

4 (g) Underground cables in haulage roads.--

5 (1) Where the cables or feed wires, other than trolley
6 wires, in main haulage roads cannot be kept at least 12
7 inches from any part of a mine car or locomotive, they shall
8 be specially protected by proper guards.

9 (2) Cables and wires, except trailing or portable cables
10 or bare return cables, shall be installed on roofs, ribs,
11 walls or timbers by means of efficient insulators. All
12 electric cables constantly kept in rooms or pillars or other
13 work areas shall be carried on suitable supports to within 70
14 feet of the face of each work area. In no instance shall the
15 method of support damage the cable jacket or armor.

16 (3) When main or other roads are being repaired or
17 blasting is being carried on, suitable temporary protection
18 from damage shall be given to the cables.

19 (4) All other wires, except telephone, shot-firing and
20 signal wires, shall be on the same side of the road as the
21 trolley wire.

22 (5) Haulage block signal circuits and other control
23 circuits powered from the trolley shall be located on the
24 same side of the road as the trolley.

25 (h) Branch circuit protection.--When the potential of a
26 branch circuit exceeds the limit of medium voltage, it shall be
27 protected by a circuit breaker, except as otherwise permitted
28 under section 331(h). The circuit breaker shall be equipped with
29 an automatic overload trip arranged to open simultaneously each
30 ungrounded power carrying conductor. Provisions for positive

1 disconnection of the branch circuit shall be included.

2 (i) Underground transformer and substation rooms.--

3 (1) Any motor-generator, rectifier except those
4 described in subsection ~~(j)~~ (R), rotary converter or oil- ←
5 filled transformer installed in a mine shall be enclosed in a
6 fireproof chamber of masonry or in an effectively grounded
7 approved steel structure. These buildings shall be provided
8 with automatically closing fire doors, but the automatic
9 features of fire doors may be omitted if a substation
10 attendant is employed. The openings of the doors shall be
11 safeguarded by grillwork so that only authorized persons may
12 enter the room. No electrical equipment containing
13 inflammable material shall be placed within eight feet of a
14 door or opening in the underground building. All underground
15 substations containing rotary machinery shall have an
16 attendant constantly on duty while rotating machinery is in
17 operation, unless adequate control and protection of the
18 equipment is assured by the use of suitable automatic
19 devices. No transformer, circuit breaker, controller or other
20 device containing more than 20 gallons of inflammable liquid
21 shall be placed in any underground substation. A separate
22 split of air shall adequately ventilate the substation. No
23 substation shall be built in any mine until the location,
24 material, construction and method of ventilation for the
25 substation has received the approval of the department.

26 (2) Main and distribution switch and fuse boards shall
27 be made of incombustible, moisture-resistant, insulating
28 material and fixed in as dry a situation as practicable or
29 shall be of suitable metal construction, exposed portions of
30 which shall be effectively grounded. All switches, circuit

1 breakers, rheostats, fuses and instruments used in connection
2 with underground motor-generators, rotary-converters, high-
3 voltage motors, transformers, and low-voltage and medium-
4 voltage motors of more than 50 horsepower or 50 KVA capacity
5 shall be installed upon a suitable switchboard or in a metal-
6 clad switchgear structure. Similar equipment for low-voltage
7 and medium-voltage motors of 50 horsepower and less may be
8 separately installed if mounted upon insulating bases of
9 suitable material or effectively metal clad.

10 (j) Clearances.--

11 (1) In underground stations where switchboards are
12 installed, there shall be a passageway in front of the
13 switchboard not less than three feet in width, and, if there
14 are any high-voltage connections at the back of the
15 switchboard, any passageway behind the switchboard shall not
16 be less than three feet. The floor at the back of the
17 switchboard shall be properly floored and insulated with
18 nonconducting material, accessible from each end. In the case
19 of high-voltage, switchboards shall be kept locked, but the
20 lock shall allow the door being opened from the inside
21 without the use of a key.

22 (2) Where the supply is at a voltage exceeding the
23 limits of medium voltage, there shall be no live metal work
24 on the front of the main switchboard within seven feet of the
25 floor or platform, and the space provided under paragraph (1)
26 shall not be less than four feet. Insulating floors or mats
27 shall be provided for medium-voltage boards where live metal
28 work is on the front.

29 (k) Transformers.--The primary of each underground power
30 transformer shall be protected by a suitable circuit breaker

1 equipped with automatic overload trip arranged to open
2 simultaneously each ungrounded power conductor. The primary of a
3 transformer of less than 25 KVA capacity operated at a potential
4 lower than high voltage may be protected by fuses. When a
5 transformer is the only load on a branch circuit, the branch
6 circuit protection can be considered the transformer protection.

7 (l) Outgoing feeder protection.--Main circuits leaving
8 underground substations or transformer stations shall be
9 protected by circuit breakers.

10 (m) Grounding.--All metallic coverings, metal armoring of
11 cables and the frames and bedplates of generators, transformers
12 and motors shall be effectively grounded.

13 (n) Identification of hazard.--All high-voltage machines and
14 apparatus shall be marked to clearly indicate that they are
15 dangerous, by the use of the words "Danger, High Voltage."

16 (o) Protection of terminals.--All terminals on machines,
17 motors or equipment over medium-voltage underground shall be
18 protected with insulating covers or metal covers effectively
19 connected to the ground.

20 (p) Unauthorized persons.--No person, other than one
21 authorized by the mine foreman or mine electrician, shall enter
22 a station or transformer room or interfere with the working of
23 any connected apparatus.

24 (q) Fire protection.--Rock dust or fire extinguishers
25 suitable for extinguishing electrical fires shall be kept ready
26 for immediate use at electrical stations and transformer rooms.

27 (r) Fireproof rectifiers and transformers.--A portable
28 rectifier with a dry-type transformer, except those using pumped
29 tubes or glass bulb mercury arc tubes or a dry-type transformer
30 designed for underground use with adequate automatic electrical

1 protection and substantially of fireproof construction, fully
2 metal clad, which will not be in the same location in excess of
3 one year, may be installed in any intake air current, not beyond
4 the last open crosscut and not closer than 250 feet along the
5 air route to pillar workings. The location where the fireproof
6 rectifier or transformer is installed need not be made fireproof
7 with masonry or steel, but shall be equipped with doors,
8 grillwork or otherwise to prevent entry or access by
9 unauthorized persons.

10 Section 314. Storage battery equipment.

11 (a) General rule.--All storage battery equipment and
12 charging stations shall be designed, operated and ventilated so
13 that gas from the batteries will be safely diluted. Storage
14 battery charging stations shall be on a separate split of air.

15 (b) Flammable materials.--The presence of flammable
16 materials is not permitted in any storage battery room or
17 charging station. Signs to this effect shall be posted in all
18 battery rooms or charging stations.

19 (c) Use in face areas.--Storage battery-operated equipment
20 may be used in face areas when all electrical parts that are
21 practicable to enclose are enclosed in explosion-proof casings
22 and the batteries are adequately ventilated.

23 Section 315. (Reserved).

24 Section 316. Electrical equipment.

25 (a) Voltage restriction.--Hand-held tools shall be
26 restricted to a maximum of 300 volts.

27 (b) Grounding.--The frame of all off-track equipment shall
28 be effectively grounded through a safety ground conductor in its
29 trailing cable.

30 (c) Hand-held tools.--Electric drills and other electrically

1 operated rotating tools intended to be hand held shall be
2 equipped with an integrally mounted electric switch designed to
3 break the circuit when the hand releases the switch.

4 (d) Trailing cables.--

5 (1) Trailing cables for equipment shall be safely and
6 efficiently insulated and constructed with an outer sheath or
7 jacket of flame-resistant material as approved by the
8 department.

9 (2) Cables for hand-held tools shall be especially
10 flexible, heavily insulated and effectively protected from
11 damage.

12 (3) Each trailing cable ON MOBILE EQUIPMENT in use shall ←
13 be examined within two hours of the beginning of each shift
14 by the machine operator for abrasions and other defects. The
15 machine operator shall also carefully observe the trailing
16 cable while in use and shall immediately report any defect to
17 the mine official in charge.

18 (4) In the event of the trailing cable in service
19 breaking down or becoming damaged in any way, or of it
20 inflicting a shock upon any person, it shall be put out of
21 service at once. The faulty cable shall not be used again
22 until it has been repaired and tested by a properly
23 authorized person.

24 (5) The trailing cable shall be divided at the machine
25 to which it is supplying power, but only for such length as
26 is necessary for making connection to the machine terminals.
27 The trailing cable, with its outer covering complete, shall
28 be securely clamped to the machine frame in a manner that
29 will protect the cable from injury and prevent any mechanical
30 strains on the single ends connected to the machine

1 terminals.

2 (6) No more than five temporary splices shall be made in
3 any trailing cable. After the fifth splice is made, the cable
4 shall be changed before the machine is operated on the
5 following shift. Trailing cables on equipment without cable A ←
6 CABLE REEL shall have no temporary splices within 50 feet of
7 the machine before the machine is operated on the following
8 shift. Cable jacket repairs not involving conductors or
9 conductor insulation are not considered temporary splices.

10 (7) Trailing cables shall be hung or adequately
11 protected to prevent them from being run over and damaged by
12 mobile machinery.

13 (8) Trailing cables on off-track equipment shall contain
14 a safety ground conductor, which shall be solidly connected
15 to the machine frame. Cables found to contain defective
16 grounds shall be repaired before use or shall be replaced.
17 The safety ground conductor shall have a cross-sectional area
18 of at least 50% of that of a single power conductor unless
19 used with ground trip protective systems employing ground
20 fault current limiting devices, in which case a smaller
21 safety ground may be used.

22 (e) Motors.--In all mines electrical equipment in use in by
23 the last open crosscut shall have all current-carrying parts
24 completely enclosed in explosion-proof enclosures. This
25 requirement shall not include trailing cable, except where
26 terminated, and shall not include flexible cable as required
27 between motors, controllers, terminal boxes and other
28 auxiliaries. The enclosures shall not be opened except by an
29 authorized person and then only when the power is switched off.
30 The power shall not be switched on while the enclosures are

1 open. Only permissible equipment is permitted inby the last
2 permanent stopping, except in rooms where open-type equipment
3 may be used only in ~~the intake travelway~~ INTAKE TRAVELWAYS. This ←
4 exception does not include power distribution equipment.

5 (f) Safeguarding.--The person in charge of mobile electrical
6 equipment shall not leave the ~~machinery~~ EQUIPMENT while it is ←
7 working and shall, before leaving the work area, see that power
8 is cut off the trailing cables.

9 (g) Explosion-tested compartments.--All explosion-tested
10 compartments and packing glands shall be maintained as approved
11 by the department.

12 (h) Detection of gas.--

13 (1) In working places, an approved hand-held gas
14 detection device shall be provided for use with each machine
15 when working. If methane gas is detected in an amount of 1%
16 or greater, the person in charge shall immediately stop the
17 machine, cut off the current at the nearest switch and report
18 the matter to a mine official.

19 (2) When not in use, equipment shall be parked away from
20 the face. No electrically operated permissible face equipment
21 shall be taken inby the last open breakthrough until the
22 machine operator assures that an inspection for gas has been
23 made in the place where the machine is to be in operation. If
24 methane gas is detected in an amount of 1% or greater by a
25 gas detection device, the machine shall not be taken in. The
26 place shall be dangered off until the gas has been removed or
27 rendered harmless.

28 (3) No electrically operated equipment shall be in use
29 for a period longer than 20 minutes without a check for
30 methane gas as required under this subsection. If methane gas

1 is found at 1% or greater, the ~~power shall immediately be~~ ←
2 ~~switched off, and the trailing cable shall be disconnected~~
3 ~~from the power supply.~~ PERSON IN CHARGE SHALL IMMEDIATELY ←
4 STOP THE MACHINE, CUT OFF THE CURRENT AT THE NEAREST SWITCH
5 AND REPORT THE MATTER TO A MINE OFFICIAL.

6 (4) The person finding gas shall at once report the fact
7 to the mine foreman, assistant mine foreman or mine examiner,
8 and the machine shall not again be started in that place
9 until the mine examiner or a person duly authorized by the
10 mine foreman has examined it and pronounced it safe.

11 (5) If any electric sparking or arc is produced outside
12 a coal-cutting or other portable motor, or by the cables or
13 rails, the machine shall be stopped, disconnected from the
14 power supply and not be worked again until the defect is
15 repaired and the occurrence shall be reported to a mine
16 official.

17 (i) Methane monitors.--

18 (1) Methane monitors shall be installed on all face-
19 cutting machines and other mechanized equipment used to
20 extract or load coal in a mine. The sensing device for
21 methane monitors shall be installed at the return end of the
22 longwall face. An additional sensing device shall also be
23 installed on the longwall shearing machine, down wind and as
24 close to the cutting head as is practicable. The sensing
25 devices for methane on other types of machines shall be
26 installed as close to the working face as is practicable.
27 Methane monitors shall be maintained in permissible and
28 proper operating conditions and shall be calibrated with a
29 known air-methane mixture at least once every 31 days. To
30 assure that methane monitors are properly maintained and

1 calibrated, the operators shall do all of the following:

2 (i) Use persons properly trained in the maintenance,
3 calibration and permissibility of methane monitors to
4 calibrate and maintain the devices.

5 (ii) Maintain a record of all calibration tests of
6 methane monitors. Records shall be maintained in a secure
7 book that is not susceptible to alteration or
8 electronically in a computer system so as to be secure
9 and not subject to alteration.

10 (iii) Retain the record of calibration tests for one
11 year from the date of the test. Records shall be retained
12 at a surface location at the mine and made available to
13 department representatives and representatives of the
14 mine workers.

15 (2) When the methane concentrations at any methane
16 monitor reach 1%, the monitor shall give a warning signal.
17 The warning signal of the methane monitor shall be visible to
18 the mining machine operator, who ~~shall~~ CAN de-energize <—
19 electric equipment or shut down diesel equipment on which the
20 monitor is mounted. A GAS CHECK SHALL BE COMPLETED IN <—
21 ACCORDANCE WITH THIS ACT IF AT ANY TIME THE METHANE
22 CONCENTRATIONS AT ANY METHANE MONITOR REACH 1.5%. THIS SHALL
23 ONLY APPLY IF THE METHANE MONITOR MAINTAINS A WARNING SIGNAL
24 FOR METHANE CONCENTRATIONS OF 1.5%.

25 (3) The methane monitor shall automatically de-energize
26 electric equipment or shut down diesel-powered equipment when
27 the methane accumulation reaches 2% or the methane monitor is
28 not operating properly.

29 Section 317. Inspection of equipment.

30 (a) Inspection required.--All electrical equipment shall be

1 inspected by the mine electrician or person designated by the
2 mine electrician weekly and, where necessary, shall be cleaned
3 and repaired.

4 (b) Removal of coal dust.--All electric motors and cables in
5 mechanical sections shall have all excessive coal dust removed
6 from their exterior surfaces once each operating shift.

7 Section 318. Stationary motors.

8 Every stationary motor underground, together with its
9 starting equipment, shall be protected by a fuse or circuit-
10 breaking device on each ungrounded pole and by switches arranged
11 to entirely cut off the power from the motor. The devices shall
12 be installed in a convenient position near the motor, and every
13 stationary underground motor of 100 brake horsepower or over
14 shall be provided with a suitable meter to indicate the load on
15 the machine.

16 Section 319. Permanent underground installation.

17 All electrical equipment not covered elsewhere under this
18 act, and except room hoists and gathering pumps which will
19 remain in the same location for a period of one year or more,
20 shall be completely housed in an incombustible structure built
21 of tile, brick, stone, concrete or grounded steel plates not
22 less than one-eighth inch in thickness, securely joined.

23 Section 320. Underground illumination.

24 (a) Sockets.--In all mines, the sockets of fixed electric
25 lamps shall be of so-called weatherproof type, the exterior of
26 which shall be entirely nonmetallic. Flexible lamp cord
27 connections are prohibited, except for portable lamps as
28 provided under subsection (c).

29 (b) Lamps.--Electric lamps shall be placed so they cannot
30 come in contact with combustible material.

1 (c) Portable electric lamps.--Portable electric lamps, other
2 than battery lamps, shall not be used in connection with the
3 repair and inspection of machines and equipment in face areas.
4 When used elsewhere, they shall be protected by a heavy wire
5 cage completely enclosing both lamp and socket and shall be
6 provided with a handle to which both cage and socket are firmly
7 attached and through which the lead-in wires are carried.

8 (d) Electric lamp enclosure.--Electric lamps, when used in
9 face areas of any mine, shall be installed in explosion-proof
10 enclosures.

11 (e) Electric lamp replacement.--Electric lamps shall be
12 replaced by a competent ~~and qualified person in face areas~~ <—
13 PERSON. IN FACE AREAS, A QUALIFIED PERSON SHALL BE UTILIZED <—
14 after an examination for gas has been made with an approved gas
15 detection device.

16 (f) Underground photography.--Underground photography using
17 flash bulbs or other sources of artificial illumination shall be
18 prohibited unless immediately preceded by an examination for gas
19 by a mine foreman, assistant mine foreman or mine examiner and
20 the place found safe.

21 Section 321. Telephones and signaling.

22 (a) Telephone service.--Telephone service or equivalent two-
23 way communication facilities shall be provided in all mines
24 between the surface and each working section that is more than
25 1,500 feet from the main portal.

26 (b) Telephone lines.--Telephone lines shall be carried on
27 insulators, installed on the opposite side from power or trolley
28 wires ~~and~~, AND INSULATED ADEQUATELY where they cross power or <—
29 trolley wires, ~~and insulated adequately.~~ <—

30 (c) Lightning arrestors.--Lightning arrestors shall be

1 provided at points where telephone circuits enter the mine.

2 (d) Telephone cables.--Telephone cables permanently
3 installed in power boreholes containing unarmored power cables
4 shall be either armored or protected at top and bottom by
5 insulating transformers.

6 (e) Precautions.--All proper precautions shall be taken to
7 prevent electric signal and telephone wires from coming into
8 contact with other electric conductors, whether insulated or
9 not.

10 (f) Standards generally.--Bells, wires, insulators, contact
11 makers and other apparatus used in connection with electric
12 signaling underground shall be of suitable design and of
13 substantial and reliable construction and erected in such a
14 manner as to reduce the liability of failures or false signals
15 to a minimum.

16 (g) Potential.--In the face areas of any mine, the potential
17 used for signal purposes shall not exceed 24 volts, and bare
18 wires shall not be used for signal circuits.

19 (h) Voltage on signal circuits.--The voltage on signal
20 circuits confined to intake air and using insulated conductors
21 may be greater than 24 volts, but shall not exceed 125 volts
22 average. This shall not apply to haulage block signal systems.

23 Section 322. Grounding.

24 (a) General rule.--In a direct-current electrical system,
25 grounding shall consist in so connecting any part of an
26 electrical system, including frames, to the earth that there
27 shall be no difference of potential between them.

28 (b) Negative side to be grounded.--Only the negative side of
29 the direct-current circuit shall be grounded.

30 (c) Rectifier diodes.--Rectifier diodes used at any

1 bituminous coal mine shall be connected to the supply circuit
2 through an isolating winding in order that isolation between
3 alternating current and direct-current systems is effected
4 EFFECTIVE.

<—
<—

5 (d) Initial installation.--The initial installation of
6 rectifiers at any bituminous coal mine shall be approved by the
7 department before being energized.

8 Section 323. Voltage limitation.

9 In no case shall the potential used in the trolley system be
10 higher than 600 volts.

11 Section 324. Incoming feeder-disconnect switches.

12 Disconnecting switches shall be installed underground in all
13 main direct-current power circuits within 500 feet of the bottom
14 of shafts, boreholes or at other places where main power
15 circuits enter a mine.

16 Section 325. Bonding.

17 Where air or water pipes parallel the grounded return of
18 power circuits, the return shall be securely bonded to the pipes
19 at frequent intervals to eliminate the possibility of a
20 difference of voltage between rails and pipes and to prevent
21 electrolysis of the pipes. The rail return shall be of
22 sufficient capacity for the current used, independent of the
23 capacity of the pipes. On main haulage roads, both rails shall
24 be bonded, except welded track, and cross bonds shall be placed
25 at points not to exceed 200 feet apart. On secondary haulage
26 roads, one rail shall be bonded continuously.

27 Section 326. Trolley installation.

28 (a) Trolley wires and feeder lines.--All trolley wires and
29 feeder lines installed on underground haulage roads shall be
30 placed as far to one side of the passageway as is practicable,

1 but not less than six inches outside of line of rail, and
2 securely supported upon hangers which shall not be more than 24
3 feet apart and efficiently insulated.

4 (b) Prohibition.--In all mines, trolley and feeder wires
5 shall not extend beyond the last open crosscut and shall be kept
6 at least 150 feet from open pillar workings.

7 (c) Switches or circuit breakers.--All branch trolley lines
8 shall be fitted with either a trolley switch, circuit breaker or
9 section insulator and line switch or some other device that will
10 allow the current to be shut off from the branch headings.

11 Switches or circuit breakers shall be provided on haulage roads
12 to de-energize all trolley and feeder lines at intervals not to
13 exceed 2,000 feet.

14 Section 327. Connections to trolley.

15 (a) Permanent connections.--All permanent connections to
16 trolley feeder circuits shall be made with suitable mechanical
17 connectors. No temporary or permanent connection shall be
18 wrapped or tied.

19 (b) Temporary connections.--Temporary connections for
20 portable equipment may be made through fused trolley taps.

21 (c) Safety ground and negative connections.--Safety ground
22 and negative connections for temporary or permanent
23 installations shall be made at two separate points, at least six
24 inches apart, and shall be made directly to the track, a bond or
25 the system ground.

26 Section 328. Guarding.

27 At all landings and partings or other places where
28 individuals are required to regularly work or pass under trolley
29 or other bare power wires, which are placed less than six and
30 one-half feet above top of rail, a suitable protection shall be

1 provided. This protection shall consist of placing boards along
2 the wire, which boards shall not be more than five inches apart
3 nor less than two inches below the lowest point of the wire. The
4 distance between boards on curves may exceed five inches, but
5 shall not exceed eight inches. This does not prohibit the use of
6 other approved devices or methods furnishing equal or better
7 protection.

8 Section 329. Locomotives.

9 (a) Electric haulage.--Electric haulage by trolley
10 locomotive is not permitted except on intake air.

11 (b) Certain operation prohibited.--It shall be unlawful to
12 run or operate a locomotive, fed directly or indirectly from a
13 trolley wire, by the open entrances to worked out places wherein
14 the pillars have been drawn or places in which the pillars have
15 not been drawn but in places where the roof has collapsed.

16 (c) Certain use proscribed.--No open-type electric
17 locomotive or open-type electric machine of whatsoever type
18 shall be taken into a working place. Main return airways or
19 passageways shall not be used as haulageways for electric
20 locomotives operated from a trolley wire.

21 Section 330. Outdoor substation.

22 The outdoor substation shall be built in accordance with
23 current Institute of Electrical and Electronics Engineers'
24 standards and department equipment performance specification and
25 shall include:

26 (1) Protective fence or enclosure.

27 (2) Primary or incoming line lightning arrestors.

28 (3) Positive disconnecting means on the incoming or
29 primary line with a circuit breaker or fuses to interrupt
30 safely any current, normal or abnormal, which might be

1 encountered.

2 (4) Transformer bank to convert the incoming or primary
3 voltage to the transmission voltage. The use of auto-
4 transformers for this purpose is prohibited. Secondary or
5 underground transmission voltage shall not exceed 15,000
6 volts, nominal, phase to phase. The transformer may be
7 connected delta-wye, wye-delta or delta-delta. Wye-wye
8 connections shall not be used because of voltage instability
9 under some conditions of load. In the event that the
10 secondary winding is delta-connected, the neutral necessary
11 for the four-wire transmission circuit shall be derived by
12 the use of a three-phase zig-zag or grounding transformer.
13 Where grounding transformers are used, they shall be of
14 sufficient capacity to carry maximum ground fault current
15 continuously. Should the substation primary or supply voltage
16 equal the mine transmission voltage, the main transformer
17 bank may be omitted and the zig-zag transformer used to
18 derive a system neutral if one is not otherwise available.

19 (5) Secondary lightning arrestors.

20 (6) Ground fault-current limiting resistor capable of
21 continuously limiting ground fault current to 25 amperes or
22 less. The resistor shall be adequately insulated and shall be
23 protected by a grounded fence or screen unless mounted eight
24 feet or more above ground.

25 (7) Secondary or mine feeder circuit breaker with
26 interrupting capacity adequate for any possible condition of
27 fault and no less than the short circuit capacity of the
28 system supplying power to the breaker. Positive disconnect
29 means shall be provided on the input and output side of the
30 breaker. Use of automatic reclosing circuit breakers is

1 prohibited. Breaker automatic tripping shall be through
2 protective relays and shall provide, as a minimum, tripping
3 by undervoltage, instantaneous and inverse time limit phase
4 overcurrent, ground fault current not exceeding 15 amperes
5 and ground-continuity check not exceeding seven amperes. The
6 ground-continuity check circuit shall continuously monitor
7 the integrity of the neutral circuit leading underground and
8 shall cause the breaker to open when either the ground or
9 pilot check wire is broken. An ammeter capable of reading
10 current in each phase and a voltmeter capable of reading
11 phase-to-phase voltage shall be provided at the circuit
12 breaker.

13 (8) Surge protection or station ground bed to which
14 shall be connected all lightning arrestor grounds, substation
15 equipment frame grounds, fence, if metallic, and substation
16 structure, if metallic. There shall be no direct connection
17 between this ground bed and either the grounded side of the
18 mine direct-current system or the neutral ground bed
19 described below.

20 (9) Neutral or primary ground bed located at least 25
21 feet away from the station ground at its closest point and to
22 which shall be connected only the inby or load end of the
23 neutral current limiting resistor. To prevent current
24 transformer core saturation by stray direct current return
25 currents, or neutral conductor damage, there shall be no
26 direct or metallic connection between any point of the high-
27 voltage alternating current neutral circuit and the mine
28 direct-current ground.

29 (10) Ground bed resistance shall be measured at least
30 every six months and appropriate action taken to assure the

1 maintenance of four ohms or less of ground bed resistance. A
2 record of these resistance measurements shall be kept in a
3 book provided for that purpose.

4 Section 331. High-voltage underground transmission system.

5 (a) Underground.--High-voltage cables leading underground
6 and extending underground shall be of the multiple conductor
7 flame-resistant type with a rubber, plastic or armor sheath
8 meeting the requirements of the department for flame resistance.
9 They shall be equipped with metallic shields around each power
10 conductor. One or more ground conductors shall be provided of a
11 total size either:

12 (1) not less than one-half the power conductor size; or

13 (2) capable of carrying two times the maximum ground
14 fault current.

15 There shall also be provided an insulated conductor not smaller
16 than No. 10 AWG for the ground-continuity check circuit. Cables
17 shall be adequate for the intended current and voltage. Splices
18 made in the cable shall provide continuity of all components and
19 shall be made in accordance with the cable manufacturers'
20 recommendations. A competent person designated by the mine
21 electrician shall supervise the making of splices.

22 (b) Subject to flexing.--High-voltage cables subject to
23 repeated flexing shall be similar in construction to type SH-D
24 in accordance with Insulated Power Cable Engineers Association
25 standard S-19-81.

26 (c) Couplers.--If couplers are used, they shall be of the
27 three-phase type with a full metallic shell and shall be
28 adequate for the voltage and current expected. All exposed metal
29 on the couplers shall be grounded to the ground conductor in the
30 cable. The coupler shall be constructed so that the ground

1 continuity conductor shall be broken first and the ground
2 conductor shall be broken last when the coupler is being
3 uncoupled.

4 (d) Equipment passing over or under cable.--At locations
5 where cables cross haulageways or travelways or where equipment
6 must pass over or under the cable, the cables shall be either
7 installed in a trench in the roof, protected by some mechanical
8 means or buried at least 12 inches below combustible material
9 and adequately protected from crushing by the weight of
10 equipment passing over it.

11 (e) Location of installation.--High-voltage cables shall be
12 installed only in intake airways. They may be installed on
13 intake haulageways only with the approval of the department. The
14 cable may be installed by hanging on suitable hooks or clamps,
15 supported by a suitable messenger cable, burying or installing
16 in metal conduit. When suspended, the distance between supports
17 shall not exceed 20 feet, and they shall be so placed that they
18 do not damage the cable jacket. When hung in a haulage entry
19 containing a trolley wire, the cable shall be installed at least
20 12 inches from the trolley wire or feeder wires and away from
21 the track.

22 (f) Excess cable.--Any excess cable which is connected and
23 supplying a load shall be coiled, stored on a reel or otherwise
24 stored at a place near the load where it can be protected by
25 dangling off the storage area. The cable shall not exceed 1,000
26 feet in length.

27 (g) Frames and enclosures.--Frames and enclosures of high-
28 voltage switch units, transformers, metallic cable couplers and
29 splice boxes shall be grounded to the common or primary ground
30 for the system in the high-voltage cable.

1 (h) Taps or branch circuits.--Taps or branch circuits from
2 the high-voltage feeder shall be made through circuit breakers
3 or suitable load break switches.

4 (i) Nonload breaking disconnect switches.--When nonload
5 breaking disconnect switches are used for sectionalizing high-
6 voltage circuits, they shall be fully metal clad, equipped with
7 a door interlock to break the ground-continuity check circuit,
8 thus tripping the feeding breaker when the door is open, and a
9 voltmeter or indicating lights to verify that the circuit is
10 deenergized before the disconnected switches are opened.

11 (j) Applicability.--For the purpose of interpretation and
12 compliance with subsection (h) and section 313(h), the following
13 apply:

14 (1) A branch circuit is a subportion of the high-voltage
15 system, serving one or more loads. The branch circuit begins
16 at the junction or splitting of the high-voltage system. The
17 junction consists of the following distinct elements:

18 (i) Input feeder, which delivers power from the
19 source.

20 (ii) Output feeder, which may extend the feeder to
21 other parts of the high-voltage system.

22 (iii) Branch circuit.

23 The output feeder is not considered as a branch circuit and
24 is not required to have electrical protection at the
25 junction, but receives electrical protection either at the
26 source substation or at some place between the source
27 substation and the junction. The branch circuit is required
28 to have protection at the junction.

29 (2) A tap supplies power to the high-voltage loads
30 located entirely within the enclosure where the connection is

1 made. Where no splitting of the feeder cable occurs, neither
2 a tap nor branch is created.

3 (3) A suitable load-break switch, which may be used in
4 lieu of a circuit breaker, is a gang-operated switch with a
5 voltage rating not less than the system voltage, capable of
6 interrupting a current equal to its continuous full load
7 rating and to be used in conjunction with fuses to provide
8 overload and short circuit protection for the load being
9 served.

10 Section 332. Load center.

11 Transmission voltage shall be reduced to machine utilization
12 voltage by a portable transformer or load center of adequate
13 capacity for the equipment powered by it. The transformer shall
14 be of the dry type, ventilated, nonventilated or sealed,
15 substantially constructed and completely enclosed in a metal
16 case. The metal enclosure shall be connected to the high-voltage
17 system ground conductor in the high-voltage cable. Complete load
18 center construction shall render it essentially fireproof. In
19 addition to these requirements, the following shall be observed:

20 (1) Connection of the high-voltage cable to the load
21 center shall be made through a cable coupler of the type
22 described in section 331(c).

23 (2) The load center shall be equipped with a positive
24 disconnect means on the incoming or high-voltage circuit.
25 This may consist of a circuit breaker, load-break switch,
26 disconnect switch or other device. The following apply:

27 (i) If a circuit breaker is used for this purpose,
28 it shall be equipped with instantaneous and inverse time
29 limit phase overcurrent and undervoltage relaying
30 protection.

1 (ii) If a device other than a circuit breaker is
2 used, it shall be so arranged that it cannot be operated
3 until the ground continuity check circuit in the high-
4 voltage cable has opened causing the nearest feeding
5 circuit breaker to trip.

6 (3) The restriction of section 330(4) pertaining to
7 transformer connections and use of zig-zag grounding
8 transformers also apply to the load center.

9 (4) The transformer secondary neutral, direct or
10 derived, shall be connected to machine trailing cable safety
11 ground conductors through a ground current limiting resistor
12 capable of limiting ground fault current to 25 amperes or
13 less. The inby side of the resistor shall be grounded to the
14 load center frame if no DC equipment powered from a common
15 mine DC system can contact the frames of AC equipment powered
16 by this load center. In the event there is a possibility of
17 frame contact between AC equipment and DC equipment supplied
18 from a common DC mine system, the inby side of the resistor
19 may be insulated from the load center frame and shall be
20 solidly connected to the DC ground system.

21 (5) The load center shall be equipped with a main
22 secondary breaker of adequate interrupting capacity with
23 tripping devices which shall feed individual machine breakers
24 located either in the load center or external to it in a
25 separate distribution center. External utilization voltage
26 connections shall be made through receptacles arranged so
27 that they cannot be uncoupled under load.

28 (6) Load centers shall be located on intake air only.
29 Load centers shall not be located beyond the last open
30 crosscut or located closer than 250 feet along the air route

1 to pillar workings.

2 Section 333. Distribution centers.

3 (a) General rule.--Distribution centers may be used to
4 distribute utilization power to portable equipment. The
5 distribution center may be connected to the load center through
6 one or more cables or conductors protected by flame-resistant
7 jackets with combined capacity sufficient to carry the maximum
8 loads that may be encountered. The distribution center shall
9 contain breakers adequate to interrupt any fault current that
10 might occur, which shall feed each unit of equipment that is
11 connected to the distribution center. Each breaker shall be
12 equipped with tripping devices that will function, on overload,
13 phase fault and ground fault. Distribution centers shall be
14 located on intake air only, and shall not be located beyond the
15 last open crosscut or closer than 150 feet from pillar workings
16 unless the distribution center shall have an approved explosion-
17 proof enclosure.

18 (b) Cables.--Utilization voltage cables shall be fitted with
19 plug couplers and provision made so that cables cannot be
20 uncoupled under load. All plugs and sockets shall be
21 substantially constructed, and any exposed metal portions shall
22 be grounded. Couplers shall be constructed so that the ground
23 conductor connection is broken last during uncoupling.

24 (c) Ground conductors.--Utilization voltage conductors,
25 cables or conductor groups shall contain one or more ground
26 conductors which when combined shall be able to carry safely and
27 continuously at least twice the maximum ground fault current.

28 (d) Option.--A combined alternating and direct-current
29 distribution or load center complete within a substantially
30 fireproof metal enclosure, with a dry type transformer and solid

1 state rectifier and adequate automatic electrical protection,
2 may be used to distribute alternating and direct current
3 utilization power. The power supply to this unit may be low,
4 medium or high voltage. When high voltage is utilized, the
5 requirements of section 332 shall apply. When medium or low
6 voltage is utilized, this section shall apply. However, when an
7 external DC distribution device is employed, the rectifier
8 output may be taken through a main DC circuit breaker to that
9 device without the use of a plug and receptacle system.

10 Section 334. Mandatory safety components of electrical
11 equipment.

12 (a) Requirement.--Low-voltage, medium-voltage and high-
13 voltage resistance ground systems shall have ground wire
14 monitors to continuously monitor the continuity of the grounding
15 circuits to the equipment affected, except for:

16 (1) Low-voltage and medium-voltage circuits supplying
17 power to longwall illumination systems.

18 (2) Low-voltage and medium-voltage stationary equipment
19 installed in accordance with all of the following:

20 (i) The equipment is permanently installed at a
21 fixed location.

22 (ii) All load components are securely attached to a
23 common metallic frame or structure.

24 (iii) Each component of the equipment is grounded by
25 two independent equipment safety grounding, each sized
26 appropriately.

27 (iv) At least one of the equipment safety ground
28 conductors to each component is visible for its entire
29 length. High-voltage resistance grounded systems shall
30 have ground wire monitors to continuously monitor the

1 continuity of the grounding circuits. All ground wire
2 monitors shall be designed and constructed to be
3 failsafe.

4 (b) Study.--The mining industry shall initiate a study to
5 enhance the safety of underground direct-current machine cables.
6 The program shall include an evaluation of ground wire monitors
7 for use on all direct-current equipment. The program shall
8 include laboratory and underground testing. The test results
9 shall be documented and presented to the Board of Coal Mine
10 Safety no later than 365 days after the effective date of this
11 act for action by the board.

12 (c) Additional study.--The mining industry shall initiate a
13 study to enhance the safety of underground cables. The program
14 shall include an evaluation of metallic shielded cable,
15 nonmetallic shielded cable and more sensitive ground fault
16 limiting and detection. The program shall include laboratory and
17 underground testing. The results shall be documented and
18 presented to the Board of Coal Mine Safety no later than 365
19 days after the effective date of this act for action by the
20 board.

21 (d) Plugs.--If plugs are used on any cable in a mine, the
22 plugs must be interlocked.

23 Section 335. High-voltage longwalls.

24 Sections 336 through 344 are electrical safety standards that
25 apply to high-voltage longwall circuits and equipment. All other
26 standards established under this act also apply to longwall
27 circuits and equipment when appropriate. The department shall
28 consider existing Federal interpretations of comparable
29 standards when implementing and enforcing these requirements.

30 Section 336. Longwall electrical protection.

1 (a) High-voltage circuits.--High-voltage circuits must be
2 protected against short circuits, overloads, ground faults and
3 undervoltages by circuit-interrupting devices of adequate
4 interrupting capacity as follows:

5 (1) Current settings of short-circuit protective devices
6 must not exceed the setting specified in approval
7 documentation or 75% of the minimum available phase-to-phase
8 short-circuit current, whichever is less.

9 (2) Time-delay settings of short-circuit protective
10 devices used to protect any cable extending from the section
11 power center to a motor-starter enclosure must not exceed the
12 settings specified in approval documentation or one-quarter
13 second, whichever is less. Time-delay settings of short-
14 circuit protective devices used to protect motor and shearer
15 circuits must not exceed the settings specified in approval
16 documentation or three cycles, whichever is less.

17 (3) Ground-fault currents must be limited by a neutral
18 grounding resistor to not more than:

- 19 (i) six and one-half amperes when the nominal
20 voltage of the power circuit is 2,400 volts or less; or
21 (ii) three and three-quarters of an ampere when the
22 nominal voltage of the power circuit exceeds 2,400 volts.

23 (4) High-voltage circuits extending from the section
24 power center must be provided with all of the following:

25 (i) Ground-fault protection set to cause de-
26 energization at not more than 40% of the current rating
27 of the neutral grounding resistor.

28 (ii) A backup ground-fault detection device to cause
29 de-energization when a ground fault occurs with the
30 neutral grounding resistor open.

1 (iii) Thermal protection for the grounding resistor
2 that will de-energize the longwall power center if the
3 resistor is subjected to a sustained ground fault. The
4 thermal protection must operate at either 50% of the
5 maximum temperature rise of the grounding resistor or 150
6 Centigrade or 302 Fahrenheit, whichever is less, and must
7 open the ground-wire monitor circuit for the high-voltage
8 circuit supplying the section power center. The thermal
9 protection must not be dependent upon control power and
10 may consist of a current transformer and overcurrent
11 relay.

12 (5) High-voltage motor and shearer circuits must be
13 provided with instantaneous ground-fault protection set at
14 not more than 0.125 of an ampere.

15 (6) Time-delay settings of ground-fault protective
16 devices used to provide coordination with the instantaneous
17 ground-fault protection of motor and shearer circuits shall
18 not exceed one-quarter second.

19 (7) Undervoltage protection shall be provided by a
20 device which operates on low voltage to cause and maintain
21 the interruption of power to a circuit to prevent automatic
22 restarting of the equipment.

23 (b) Current transformers.--Current transformers used for the
24 ground-fault protection specified in subsection (a)(1), (4)(i)
25 and (5) must be single window type and must be installed to
26 encircle all three-phase conductors. Equipment safety grounding
27 conductors must not pass through or be connected in series with
28 ground-fault current transformers.

29 (c) Test circuit.--Each ground-fault current device
30 specified in subsection (a)(4)(i) and (5) must be provided with

1 a test circuit that will inject a primary current of 50% or less
2 of the current rating of the grounding resistor through the
3 current transformer and cause each corresponding circuit-
4 interrupting device to open.

5 (d) Prohibition.--Circuit-interrupting devices shall not
6 reclose automatically.

7 (e) Multiple cables.--Where two or more high-voltage cables
8 are used to supply power to a common bus in a high-voltage
9 enclosure, each cable must be provided with ground wire
10 monitoring. The ground wire monitoring circuits must cause de-
11 energization of each cable when either the ground monitor or
12 grounding conductor of any cable becomes severed or open. On or
13 after the effective date of this section, parallel-connected
14 cables on newly installed longwalls must be protected as
15 follows:

16 (1) ~~When~~ WHEN one circuit-interrupting device is used to <—
17 protect parallel-connected cables, the circuit-interrupting
18 device must be electrically interlocked with the cables so
19 that the device will open when any cable is disconnected; OR <—

20 (2) ~~When~~ WHEN two or more parallel circuit-interrupting <—
21 devices are used to protect parallel-connected cables, the
22 circuit-interrupting devices must be mechanically and
23 electrically interlocked. Mechanical interlocking shall cause
24 all devices to open simultaneously and electrical
25 interlocking shall cause all devices to open when any cable
26 is disconnected.

27 Section 337. Longwall disconnect switches.

28 (a) Section power center.--The section power center must be
29 equipped with a main disconnecting device installed to de-
30 energize all cables extending to longwall equipment when the

1 device is in the open position.

2 (b) Maintenance.--Disconnecting devices for motor-starter
3 enclosures must be maintained in accordance with the
4 department's approval. The compartment for the disconnect device
5 must be provided with a caution label to warn miners against
6 entering the compartment before de-energizing the incoming high-
7 voltage circuits to the compartment.

8 (c) Rating.--Disconnecting devices must be rated for the
9 maximum phase-to-phase voltage of the circuit in which they are
10 installed and for the full load current of the circuit that is
11 supplied power through the device.

12 (d) Installation.--Each disconnecting device must be
13 designed and installed so that:

14 (1) Visual observation determines that the contacts are
15 open without removing any cover.

16 (2) All load power conductors can be grounded when the
17 device is in the open position.

18 (3) The device can be locked in the open position.

19 (e) Capability.--Disconnecting devices, except those
20 installed in explosion-proof enclosures, shall be capable of
21 interrupting the full load current of the circuit or designed
22 and installed to cause the current to be interrupted
23 automatically prior to the opening of the contacts of the
24 device. Disconnecting devices installed in explosion-proof
25 enclosures shall be maintained in accordance with the
26 department's approval.

27 Section 338. Guarding of longwall cables.

28 (a) High-voltage cables.--High-voltage cables shall be
29 guarded at the following locations:

30 (1) Where persons regularly work or travel over or under

1 the cables.

2 (2) Where the cables leave cable handling or support
3 systems to extend to electric components.

4 (b) Intent and design of guarding.--Guarding shall minimize
5 the possibility of miners contacting the cables and protect the
6 cables from damage. The guarding shall be made of grounded metal
7 or nonconductive flame-resistant material.

8 Section 339. Longwall cable-handling and support systems.

9 Longwall mining equipment shall be provided with cable-
10 handling and support systems that are constructed, installed and
11 maintained to minimize the possibility of miners contacting the
12 cables and to protect the high-voltage cables from damage.

13 Section 340. Use of longwall insulated cable handling
14 equipment.

15 (a) General rule.--Energized high-voltage cables shall not
16 be handled except when motor or shearer cables need to be
17 trained. When cables need to be trained, high-voltage insulated
18 gloves, mitts, hooks, tongs, slings, aprons or other personal
19 protective equipment capable of providing protection against
20 shock hazard shall be used to prevent direct contact with the
21 cable.

22 (b) Standards, examinations, testing and replacement.--High-
23 voltage insulated gloves, sleeves and other insulated personal
24 protective equipment shall:

25 (1) have a voltage rating of at least Class 1, 7,500
26 volts, that meets or exceeds ASTM F496-97, Standard
27 Specification for In-Service Care of Insulating Gloves and
28 Sleeves (1997);

29 (2) be examined before each use for visible signs of
30 damage;

1 (3) be removed from the underground area of the mine or
2 destroyed when damaged or defective; and

3 (4) be electrically tested every six months.

4 Section 341. Maintenance.

5 Compartment separation and cover interlock switches for
6 motor-starter enclosures shall be maintained in accordance with
7 section 342.

8 Section 342. High-voltage longwall mining systems.

9 (a) General rule.--In each high-voltage motor-starter
10 enclosure, with the exception of a controller on a high-voltage
11 shearer, the disconnect device compartment,
12 control/communications compartment and motor contactor
13 compartment shall be separated by barriers or partitions to
14 prevent exposure of personnel to energized high-voltage
15 conductors or parts. Barriers or partitions shall be constructed
16 of grounded metal or nonconductive insulating board.

17 (a.1) High-voltage shearers.--In each motor-starter
18 enclosure on a high-voltage shearer, the high-voltage components
19 shall be separated from lower voltage components by barriers or
20 partitions to prevent exposure of personnel to energized high-
21 voltage conductors or parts. Barriers or partitions shall be
22 constructed of grounded metal or nonconductive insulating board.

23 (b) Interlock switches.--Each cover of a compartment in the
24 high-voltage motor-starter enclosure containing high-voltage
25 components shall be equipped with at least two interlock
26 switches arranged to automatically de-energize the high-voltage
27 components within that compartment when the cover is removed.

28 (c) Circuit-interrupting devices.--Circuit-interrupting
29 devices shall be designed and installed to prevent automatic
30 reclosure ~~of the cover~~.

←

1 (d) Transformers.--Transformers with high-voltage primary
2 windings that supply control voltages shall incorporate grounded
3 electrostatic (Faraday) shielding between the primary and
4 secondary windings. The shielding shall be connected to the
5 equipment ground by a minimum No. 12 AWG grounding conductor.
6 The secondary nominal voltage shall not exceed 120 volts, line
7 to line.

8 (e) Test circuits.--Test circuits shall be provided for
9 checking the condition of ground wire monitors and ground-fault
10 protection without exposing personnel to energized circuits.
11 Each ground-test circuit shall inject a primary current of 50%
12 or less of the current rating of the grounding resistor through
13 the current transformer and cause each corresponding circuit-
14 interrupting device to open.

15 (f) Disconnect devices.--Each motor-starter enclosure, with
16 the exception of a controller on a high-voltage shearer, shall
17 be equipped with a disconnect device installed to de-energize
18 all high-voltage power conductors extending from the enclosure
19 when the device is in the open position.

20 (1) When multiple disconnect devices located in the same
21 enclosure are used to satisfy the requirement of this
22 subsection, they shall be mechanically connected to provide
23 simultaneous operation by one handle.

24 (2) The disconnect device shall be rated for the maximum
25 phase-to-phase voltage and the full-load current of the
26 circuit in which it is located and installed so that:

27 (i) visual observation determines that the contacts
28 are open without removing any cover;

29 (ii) the load-side power conductors are grounded
30 when the device is in the open position;

1 (iii) the device can be locked in the open position;
2 (iv) when located in an explosion-proof enclosure,
3 the device shall be designed and installed to cause the
4 current to be interrupted automatically prior to the
5 opening of the contacts; and

6 (v) when located in a nonexplosion-proof enclosure,
7 the device shall be designed and installed to cause the
8 current to be interrupted automatically prior to the
9 opening of the contacts, or the device shall be capable
10 of interrupting the full-load current of the circuit.

11 (g) Starters to be interlocked.--Control circuits for the
12 high-voltage motor starters shall be interlocked with the
13 disconnect device so that:

14 (1) The control circuit can be operated with an
15 auxiliary switch in the test position only when the
16 disconnect device is in the open and grounded position.

17 (2) The control circuit can be operated with the
18 auxiliary switch in the normal position only when the
19 disconnect switch is in the closed position.

20 (h) Determination of minimum available fault current.--A
21 study to determine the minimum available fault current shall be
22 submitted to the department to ensure adequate protection for
23 the length and conductor size of the longwall motor, shearer and
24 trailing cables.

25 (i) Shielded construction of certain cables.--Longwall motor
26 and shearer cables with nominal voltages greater than 660 volts
27 shall be made of a shielded construction with a grounded
28 metallic shield around each power conductor.

29 (j) Instantaneous ground fault protection.--High-voltage
30 motor and shearer circuits shall be provided with instantaneous

1 ground fault protection of not more than 0.125 of an ampere.
2 Current transformers used for this protection shall be of the
3 single window type and shall be installed to encircle all three-
4 phase conductors.

5 Section 343. Longwall electrical work.

6 (a) Qualified workers.--Electrical work on all circuits and
7 equipment associated with high-voltage longwalls shall be
8 performed by MSHA-qualified persons.

9 (b) Procedures for work on circuits and equipment.--Except
10 for troubleshooting and testing of energized circuits and
11 equipment as provided under subsection (d), prior to performing
12 electrical work a qualified person shall do the following:

13 (1) De-energize the circuit or equipment with a circuit-
14 interrupting device.

15 (2) Open the circuit-disconnecting device. On high-
16 voltage circuits, ground the power conductors until work on
17 the circuit is completed.

18 (3) Lock out the disconnecting device with a padlock.
19 When more than one qualified person is performing work, each
20 person shall install an individual padlock.

21 (4) Tag the disconnecting device to identify each person
22 working and the circuit or equipment on which work is being
23 performed.

24 (c) Restrictions relating to low-voltage, medium-voltage or
25 high-voltage distribution circuits or equipment.--No electrical
26 work shall be performed on low-voltage, medium-voltage or high-
27 voltage distribution circuits or equipment, except by a
28 qualified person or a person trained to perform electrical work
29 and to maintain electrical equipment under the direct
30 supervision of a qualified person. Disconnecting devices shall

1 be locked out and suitably tagged by the persons who perform the
2 work, except that in cases where locking out is not possible,
3 the devices shall be opened and suitably tagged by persons
4 performing the work. Locks or tags shall be removed only by the
5 persons who installed them or, if such persons are unavailable,
6 by persons authorized by the operator or his agent.

7 (d) Troubleshooting and testing of energized circuits.--
8 Troubleshooting and testing of energized circuits must be
9 performed only:

10 (1) On low-voltage and medium-voltage circuits.

11 (2) When the purpose of troubleshooting and testing is
12 to determine voltages and currents.

13 (3) By persons qualified to perform electrical work and
14 who wear protective gloves. Rubber-insulating gloves shall be
15 rated at least for the nominal voltage of the circuit when
16 the voltage of the circuit exceeds 120 volts nominal and is
17 not intrinsically safe.

18 (e) Troubleshooting and testing of multiple voltage
19 circuits.--Before troubleshooting and testing a low-voltage or
20 medium-voltage circuit contained in a compartment with a high-
21 voltage circuit, the high-voltage circuit must be de-energized,
22 disconnected, grounded, locked out and tagged in accordance with
23 subsection (b).

24 (f) Conveyor belt structures.--Prior to the installation or
25 removal of a conveyor belt structure, high-voltage cables
26 extending from the section power center to the longwall
27 equipment and located in the belt entries shall be:

28 (1) deenergized; or

29 (2) guarded in accordance with section 338, at the
30 location where the belt structure is being installed or

1 removed.

2 Section 344. Testing, examination and maintenance of longwall
3 equipment.

4 (a) Equipment subject to seven-day inspection schedule.--At
5 least once every seven days, a MSHA-qualified person shall test
6 and examine each unit of high-voltage longwall equipment and
7 circuits to determine that electrical protection, equipment
8 grounding, permissibility cable insulation and control devices
9 are being properly maintained to prevent fire, electrical shock,
10 ignition or operational hazards from existing on the equipment.
11 Tests shall include activating the ground-fault test circuit.

12 (b) Equipment subject to 30-day inspection schedule.--Each
13 ground-wire monitor and associated circuits shall be examined
14 and tested at least once every 30 days to verify proper
15 operation and to verify that it will cause the corresponding
16 circuit-interrupting device to open.

17 (c) Removal or repair of equipment.--When examinations or
18 tests of equipment reveal a fire, electrical shock, ignition or
19 operational hazard, the equipment must be removed from service
20 immediately or repaired immediately.

21 (d) Certifications and records.--At the completion of
22 examinations and tests required by this section, the person who
23 makes the examinations and tests shall certify by signature and
24 date that they have been conducted. A record shall be made of
25 any unsafe condition found and any corrective action taken.
26 Certifications and records shall be kept for at least one year
27 and shall be made available for inspection by authorized
28 representatives of the department and representatives of miners.

29 Section 345. (Reserved).

30 Section 346. (Reserved).

1 Section 347. (Reserved).

2 Section 348. (Reserved).

3 Section 349. (Reserved).

4 Section 350. Equipment approvals.

5 (a) Departmental discretion.--The department may require the
6 approval of all underground equipment, surface substations
7 feeding power underground, fans and personnel conveyances
8 (elevators, man hoists and escape capsules) connected to an
9 underground mine. All elevators at the time of installation
10 shall meet the criteria established in the current American
11 Society of Mechanical Engineers A17.1 Code, pertaining to
12 special application elevators, mine elevators, connected to an
13 underground mine. The equipment shall be grouped as follows for
14 the purposes of approval:

15 (1) Bituminous face equipment (BFE) - permissible
16 equipment.

17 (2) Bituminous open type equipment (BOTE) - non-
18 permissible equipment.

19 (3) Bituminous power distribution equipment (BPDE) -
20 nonpermissible power equipment.

21 (4) Surface installations:

22 (i) Mine power substations (MM-S).

23 (ii) Fans I (MM-F).

24 (iii) Personnel conveyances (MM-P).

25 (5) Minewide monitoring systems (MWMS).

26 (b) Limitation of approvals.--The approvals under subsection
27 (a) are specifically limited by the provision that permissible
28 equipment approved by the MSHA Approval and Certification Center
29 that is not in conflict with and which meets the requirements of
30 this act shall be deemed to be approved by the department.

1 (c) Procedures for approval.--The procedures for approval of
2 underground and surface equipment are as follows:

3 (1) Approvals shall be limited to electrical systems,
4 safety systems required by this act and specifications
5 developed by the task force established by the parties and
6 provided for under subsection (d).

7 (2) Newly purchased permissible equipment shall be
8 constructed in a fashion as to provide accessibility for
9 inspection of permissible components.

10 (3) The evaluation to determine whether the equipment
11 should be approved shall be based strictly on the specific
12 criteria set forth in this act and the performance
13 specifications under subsection (d). In the absence of
14 performance specifications for equipment or specific
15 provisions of this act addressing such equipment; and if the
16 department considers that the equipment as designed or built
17 poses an unacceptable risk to the health or safety of miners,
18 the following procedure shall be applied:

19 (i) The department, in a written report, shall
20 specify the unacceptable risk, based upon objective
21 ascertainable data and criteria approved by a nationally
22 recognized standards organization.

23 (ii) The department shall convene a task force to
24 develop specifications for the equipment in an expedited
25 fashion.

26 (iii) If the task force is unable to develop
27 applicable performance standards within 75 days, the
28 department may continue to withhold approval based upon
29 noncompliance with a mandatory safety standard of a
30 nationally recognized standards organization that has

1 been shown to be appropriate for mining.

2 (4) For new equipment, the prototype of which has not
3 been previously approved, a manufacturer or operator shall
4 submit to the department an application requesting approval.
5 The request for approval shall include four schematics, a
6 description and any other pertinent information for the
7 equipment.

8 (5) The application under paragraph (4) shall be
9 reviewed within 15 working days after receipt. Within the ~~45-~~ <—
10 ~~day~~ 15-DAY period the department shall communicate verbally <—
11 and in writing to the applicant all discrepancies between the
12 application and the equipment performance specifications. If
13 the department does not communicate to the applicant within
14 the 15 days as described in this paragraph, the application
15 shall be deemed approved. If the applicant submits additional
16 schematics or information, the department shall have an
17 additional 15 days to communicate to the applicant concerning
18 such additional schematics or information.

19 (6) When the application review under paragraph (5) is
20 complete, an inspector shall be assigned to evaluate the
21 equipment and the operator or manufacturer notified of that
22 assignment. The equipment inspection shall be scheduled
23 within 20 working days of the departmental inspector being
24 notified. If the inspector gets to the inspection site and
25 the equipment is not in conformance with the specific
26 criteria set forth in this act and the performance
27 specifications described in this section, the time frame
28 shall stop. When the equipment has been modified to conform
29 with the specific criteria set forth in this act and the
30 performance specifications, the operator shall notify the

1 department for a reinspection, and the department shall
2 schedule the reinspection within ten working days. If the
3 equipment is in conformance with the specific criteria set
4 out in this act and the performance specifications described
5 in this section, but the schematics are not, the equipment
6 can be used, but the operator or manufacturer shall have ten
7 working days to resubmit the corrected schematics or the
8 equipment shall be taken out of service.

9 (7) For previously approved equipment that an operator
10 proposes to modify, the approval procedure established for
11 new equipment that has not been previously approved is to be
12 applicable. The approval process shall address only the
13 modification that has been made and shall not require changes
14 to the components of the equipment that were initially
15 approved. For the purpose of this paragraph, modification
16 shall not include changes to equipment in which components
17 are changed and replaced with components that provide
18 equivalent protection. Modifications subject to approval
19 shall include only those changes to equipment which affect
20 whether the equipment still satisfies the applicable
21 performance specifications described in this section or set
22 out specifically in this act.

23 (8) Approved equipment and repaired equipment that has
24 not been modified are outside the scope of the approval
25 process and shall be handled under the mine inspection
26 program of the department.

27 (9) Any direction to take corrective action shall be in
28 writing and shall specify the provisions of this act or the
29 performance specifications upon which the department relies.

30 (10) The department has the right to inspect equipment

1 to determine that it is in compliance with applicable
2 requirements of this act and the equipment performance
3 specifications. The inspections shall be performed in the
4 normal course of inspecting the mine and shall, to the extent
5 feasible, minimize the disruption of production.

6 (11) New or rebuilt equipment that has been approved,
7 but has not been inspected by an approval inspector, shall be
8 inspected by a mine electrical inspector. The operator shall
9 give reasonable notice to the mine electrical inspector for
10 an inspection prior to the equipment entering the mine. The
11 inspection shall be performed in the normal course of
12 inspecting the mine and shall, to the extent feasible,
13 minimize the disruption of production.

14 (d) Written criteria for equipment performance
15 specifications.--A task force shall be established to develop
16 written criteria for equipment performance specifications.

17 (1) The task force shall be comprised of equal numbers
18 of representatives, not less than two nor more than four,
19 selected by the department and the major trade association
20 representing coal operators in this Commonwealth. Final
21 consensus on performance specifications shall be determined
22 by a majority of the task force.

23 (2) The task force shall develop performance
24 specifications for approval of equipment and reserves the
25 right, for just cause, to add or delete from the developed
26 equipment performance specifications.

27 (3) All equipment performance specifications approved
28 pursuant to the stipulation of settlement shall remain in
29 effect unless and until they are modified, suspended or
30 revoked by this act, regulations promulgated under this act

1 or the equipment performance specifications task force.

2 (e) Definitions.--As used in this section, the following
3 words and phrases shall have the meanings given to them in this
4 subsection:

5 "Permissible equipment." As applied to electric face
6 equipment, all electrically operated equipment taken into or
7 used in or by the last open crosscut of an entry or a room of
8 any coal mine the electrical parts of which equipment,
9 including, but not limited to, associated electrical equipment,
10 components and accessories, are designed, constructed and
11 installed in accordance with the specifications of MSHA to
12 assure that the equipment will not cause a mine explosion or
13 mine fire, and the other features of which are designed and
14 constructed, in accordance with the specifications of the
15 Secretary of Environmental Protection, to prevent, to the
16 greatest extent possible, other accidents in the use of the
17 equipment.

18 CHAPTER 4

19 DIESEL-POWERED EQUIPMENT

20 Section 401. Underground use.

21 (a) General rule.--Underground use of inby and outby diesel-
22 powered equipment, including mobile equipment, stationary
23 equipment and equipment of all horsepower ratings, shall only be
24 approved, operated and maintained as provided under this
25 chapter, except for emergency fire-fighting equipment to be used
26 specifically for that purpose.

27 (b) Required attendant.--All diesel-powered equipment shall
28 be attended while in operation with the engine running in
29 underground mines. For purposes of this subsection, "attended"
30 shall mean an equipment operator is within sight or sound of the

1 diesel-powered equipment.

2 (c) Required certifications or approvals.--Inby and outby
3 diesel-powered equipment may be used in underground mines if the
4 inby or outby diesel-powered equipment uses an engine approved
5 or certified by MSHA, as applicable, for inby or outby use that,
6 when tested at the maximum fuel-air ratio, does not require a
7 MSHA Part 7 approval plate ventilation rate exceeding 75 c.f.m.
8 per rated horsepower. If MSHA promulgates new regulations that
9 change the MSHA Part 7 approval plate ventilation rate, the
10 c.f.m. requirement per rated horsepower shall be revised either
11 up or down on a direct ratio basis upon recommendation of the
12 technical advisory committee in accordance with section 424.
13 Section 402. Diesel-powered equipment package.

14 (a) Approval.--All diesel-powered equipment shall be
15 approved by the secretary as a complete diesel-powered equipment
16 package which shall be subject to all of the requirements,
17 standards and procedures set forth under this chapter.

18 (b) Diesel engine approval.--Diesel engines shall be
19 certified or approved, as applicable, by MSHA and maintained in
20 accordance with MSHA certification or approval and secretary
21 approval.

22 Section 403. Exhaust emissions control.

23 (a) Exhaust emissions control systems.--

24 (1) Except as provided in paragraph (3), underground
25 diesel-powered equipment shall include an exhaust emissions
26 control and conditioning system that has been laboratory
27 tested with the diesel engine using the ISO 8178-1 test and
28 has resulted in diesel particulate matter emissions that do
29 not exceed an average concentration of 0.12 mg/m³ when
30 diluted by 100% of the MSHA Part 7 approval plate ventilation

1 rate for that diesel engine. If MSHA promulgates new
2 regulations that change the MSHA Part 7 approval plate
3 ventilation rate, the dilution percentage relative to the
4 approval plate ventilation rate shall be adjusted either up
5 or down on a direct ratio basis upon recommendation of the
6 technical advisory committee in accordance with section 424.

7 (2) Except as provided in paragraph (3), the exhaust
8 emissions control and conditioning system shall be required
9 to successfully complete a single series of laboratory tests
10 for each diesel engine, conducted at a laboratory accepted by
11 the secretary.

12 (3) An exhaust emissions control and conditioning system
13 may be approved for multiple diesel engine applications
14 through a single series of laboratory tests, known as the ISO
15 8178-1 test, only if data is provided to the technical
16 advisory committee that reliably verifies that the exhaust
17 emissions control and conditioning system meets, for each
18 diesel engine, the in-laboratory diesel particulate matter
19 standard established by this subsection. Data provided to
20 satisfy this paragraph shall include diesel particulate
21 matter production rates for the specified engine as measured
22 during the ISO 8178-1 test, if available. If ISO 8178-1 test
23 data for diesel particulate matter production is not
24 available for a specified engine, comparable data may be
25 provided to the technical advisory committee that reliably
26 verifies that the exhaust emissions control and conditioning
27 system shall meet, for the specified diesel engine, the in-
28 laboratory diesel particulate matter standard established by
29 this subsection. This standard shall only be used for in-
30 laboratory testing for approval of diesel-powered equipment

1 for use underground.

2 (b) Components of exhaust emissions system.--The exhaust
3 emissions control and conditioning system shall include the
4 following:

5 (1) A diesel particulate matter (DPM) filter that has
6 proven capable of a reduction in total diesel particulate
7 matter to a level that does not exceed the requirements of
8 subsection (a)(1). However, the technical advisory committee
9 may evaluate, in accordance with section 424, alternative
10 technologies that have the ability to meet the 0.12 mg/m³
11 standard.

12 (2) An oxidation catalyst or other gaseous emissions
13 control device capable of reducing undiluted carbon monoxide
14 emissions to 100 ppm or less under all conditions of
15 operation at normal engine operating temperature range.

16 (3) An engine surface temperature control capable of
17 maintaining significant external surface temperatures below
18 302 degrees Fahrenheit.

19 (4) A system capable of reducing the exhaust gas
20 temperature below 302 degrees Fahrenheit.

21 (5) An automatic engine shutdown system that shuts off
22 the engine before the exhaust gas temperature reaches 302
23 degrees Fahrenheit and, if water-jacketed components are
24 used, before the engine coolant temperature reaches 212
25 degrees Fahrenheit. A warning shall be provided to alert the
26 equipment operator prior to engine shutdown.

27 (6) A spark arrestor system.

28 (7) A flame arrestor system.

29 (8) A sampling port for measurement of undiluted and
30 untreated exhaust gases as they leave the engine.

1 (9) A sampling port for measurement of treated undiluted
2 exhaust gases before they enter the mine atmosphere.

3 (10) For permissible diesel equipment, any additional
4 MSHA regulations must be met.

5 (c) Diagnostics systems.--Onboard engine performance and
6 maintenance diagnostics systems shall be capable of continuously
7 monitoring and giving readouts for paragraphs (1), (2), (3),
8 (4), (5), (6), (7) and (8). The diagnostics system shall
9 identify levels that exceed the engine or component
10 manufacturer's recommendation or the applicable MSHA or bureau
11 requirements as to the following:

- 12 (1) Engine speed.
- 13 (2) Operating hour meter.
- 14 (3) Total intake restriction.
- 15 (4) Total exhaust back pressure.
- 16 (5) Cooled exhaust gas temperature.
- 17 (6) Coolant temperature.
- 18 (7) Engine oil pressure.
- 19 (8) Engine oil temperature.

20 Section 404. Ventilation.

21 (a) Minimum quantities.--Minimum quantities of ventilating
22 air where diesel-powered equipment is operated shall be
23 maintained pursuant to this section.

24 (b) Approvals.--Each specific model of diesel-powered
25 equipment shall be approved by the secretary before it is taken
26 underground. The secretary shall require that an approval plate
27 be attached to each piece of the diesel-powered equipment. The
28 approval plate shall specify the minimum ventilating air
29 quantity for the specific piece of diesel-powered equipment. The
30 minimum ventilating air quantity shall be determined by the

1 bureau based on the amount of air necessary at all times to
2 maintain the exhaust emissions at levels not exceeding the
3 exposure limits established under section 419.

4 (c) ~~(Reserved)~~. MINIMUM AIR QUANTITIES.--THE MINIMUM ←
5 QUANTITIES OF AIR IN ANY SPLIT WHERE ANY INDIVIDUAL UNIT OF
6 DIESEL-POWERED EQUIPMENT IS BEING OPERATED SHALL BE AT LEAST
7 THAT SPECIFIED ON THE APPROVAL PLATE FOR THAT EQUIPMENT. AIR
8 QUANTITY MEASUREMENTS TO DETERMINE COMPLIANCE WITH THIS
9 REQUIREMENT SHALL BE MADE AT THE INDIVIDUAL UNIT OF DIESEL-
10 POWERED EQUIPMENT.

11 (d) Multiple units in operation.--Where multiple units are
12 operated, the minimum quantity shall be at least the total of
13 100% of MSHA's Part 7 approval plate ventilation rate for each
14 unit operating in that split. Air quantity measurements to
15 determine compliance with this requirement shall be made at the
16 most downwind unit of diesel-powered equipment that is being
17 operated in that air split. If MSHA promulgates new regulations
18 that change the MSHA Part 7 approval plate ventilation rate, the
19 minimum quantity where multiple units are operated shall be
20 revised on a direct ratio basis upon recommendation of the
21 technical advisory committee in accordance with section 424.

22 (e) Minimum quantities of air in certain splits.--The
23 minimum quantities of air in any split where any diesel-powered
24 equipment is operated shall be in accordance with the minimum
25 air quantities required in subsections (a) and (b) and shall be
26 specified in the mine diesel ventilation plan.

27 Section 405. Fuel storage facilities.

28 (a) General rule.--An underground diesel fuel storage
29 facility shall be any facility designed and constructed to
30 provide for the storage of any mobile diesel fuel transportation

1 units or the dispensing of diesel fuel.

2 (b) Diesel fuel standards.--Diesel-powered equipment shall
3 be used underground only with fuel that meets the standards of
4 the most recently approved United States Environmental
5 Protection Agency (EPA) guidelines for over-the-road fuel.
6 Additionally, the fuel shall also meet the ASTM D975 standards
7 with a flash point of 100 degrees Fahrenheit or greater at
8 standard temperature and pressure. The operator shall maintain a
9 copy of the most recent delivery receipt from the supplier to
10 verify that the fuel used underground meets this standard.

11 (c) Requirements.--Underground diesel fuel storage
12 facilities shall meet the following general requirements:

13 (1) Fixed underground diesel fuel storage tanks are
14 prohibited.

15 (2) No more than 500 gallons of diesel fuel shall be
16 stored in each underground diesel fuel storage facility.

17 (d) Location.--Underground diesel fuel storage facilities
18 shall be located as follows:

19 (1) at least 100 feet from shafts, slopes, shops and
20 explosives magazines;

21 (2) at least 25 feet from trolley wires, haulage ways,
22 power cables and electric equipment not necessary for the
23 operation of the storage facilities; and

24 (3) in an area that is as dry as practicable.

25 (e) Construction requirements.--

26 (1) Underground diesel fuel storage facilities shall
27 meet the construction requirements and safety precautions
28 under this subsection.

29 (2) Underground diesel fuel storage facilities shall
30 meet all of the following:

1 (i) Be constructed of noncombustible materials and
2 provided with either self-closing or automatic closing
3 doors.

4 (ii) Be ventilated directly into the return air
5 course using noncombustible materials.

6 (iii) Be equipped with an automatic fire suppression
7 system complying with section 408. The technical advisory
8 committee may recommend for approval an alternate method
9 of complying with this section on a mine-by-mine basis in
10 accordance with section 424.

11 (iv) Be equipped with at least two portable 20-pound
12 multipurpose dry-chemical type fire extinguishers.

13 (v) Be marked with conspicuous signs designating
14 combustible liquid storage.

15 (vi) Be included in the preshift examination.

16 (3) Welding or cutting other than that performed in
17 accordance with paragraph (4) shall not be done within 50
18 feet of a diesel fuel storage facility.

19 (4) When it is necessary to weld, cut or solder
20 pipelines, cylinders, tanks or containers that may have
21 contained diesel fuel, the following requirements shall
22 apply:

23 (i) Cutting or welding shall not be performed on or
24 within containers or tanks that have contained
25 combustible or flammable materials until the containers
26 or tanks have been thoroughly purged and cleaned or
27 rendered inert and a vent or opening is provided to allow
28 for sufficient release of any buildup pressure before
29 heat is applied.

30 (ii) Diesel fuel shall not be allowed to enter

1 pipelines or containers that have been welded, soldered,
2 brazed or cut until the metal has cooled to ambient
3 temperature.

4 Section 406. Transfer of diesel fuel.

5 (a) General rule.--Diesel fuel shall be transferred as
6 provided in this section.

7 (b) Pump transfers.--When diesel fuel is transferred by
8 means of a pump and a hose equipped with a nozzle containing a
9 self-closing valve, a powered pump may be used only if:

10 (1) the hose is equipped with a nozzle containing a
11 self-closing valve without a latch-open device; and

12 (2) the pump is equipped with an accessible emergency
13 shutoff switch.

14 (c) Compressed gas prohibition.--Diesel fuel shall not be
15 transferred using compressed gas.

16 (d) Status of diesel engine.--Diesel fuel shall not be
17 transferred to the fuel tank of diesel-powered equipment while
18 the equipment's engine is running.

19 (e) Dry-system design.--Diesel fuel piping systems shall be
20 designed and operated as dry systems.

21 (f) Standards for pipes, valves and fittings.--All piping,
22 valves and fittings shall meet the following requirements:

23 (1) Be capable of withstanding working pressures and
24 stresses.

25 (2) Be capable of withstanding four times the static
26 pressures.

27 (3) Be compatible with diesel fuel.

28 (4) Be maintained in a manner that prevents leakage.

29 (g) Manual shutoff valves.--Vertical pipelines shall have
30 manual shutoff valves installed at the surface filling point and

1 at the underground discharge point.

2 (h) Exposed fuel pipelines.--Unburied diesel fuel pipelines
3 shall not exceed 300 feet in length and shall have shutoff
4 valves located at each end of the unburied pipeline.

5 (i) Horizontal pipeline prohibition.--Horizontal pipelines
6 shall not be used to distribute fuel throughout a mine.

7 (j) Limitation on piping systems.--Diesel fuel piping
8 systems shall be used only to transport fuel from the surface
9 directly to a single underground diesel fuel transfer point.

10 (k) Restrictions related to boreholes.--When boreholes are
11 used, the diesel fuel piping system shall not be located in a
12 borehole with electric power cables.

13 (l) Inspections.--Diesel fuel pipelines located in any shaft
14 shall be included as part of the required examination of the
15 shaft.

16 (m) Location in entries.--Diesel fuel piping systems located
17 in entries shall not be located on the same side of the entry as
18 electric cables or power lines.

19 (n) Trolley-haulage limitations.--Diesel fuel pipelines
20 shall not be located in any trolley-haulage entry, except that
21 they may cross the entry perpendicular if buried or otherwise
22 protected from damage and sealed.

23 (o) Protection.--Diesel fuel piping systems shall be
24 protected to prevent physical damage.

25 Section 407. Containers.

26 (a) General rule.--Containers for the transport of diesel
27 fuel shall meet the requirements of this section.

28 (b) Limitations on containers.--Diesel fuel shall be
29 transported only in containers specifically designed for the
30 transport of diesel fuel.

1 (c) Limitations on vehicle transport.--No more than one
2 safety can, conspicuously marked, shall be transported on a
3 vehicle at any time.

4 (d) Standards for containers other than safety containers.--
5 Containers, other than safety cans, used to transport diesel
6 fuel shall be provided with the following:

7 (1) Devices for venting.

8 (2) Self-closing caps.

9 (3) Vent pipes at least as large as the fill or
10 withdrawal connection, whichever is larger, but not less than
11 one and one-fourth inch nominal inside diameter.

12 (4) Liquid-tight connections for all container openings
13 that are identified by conspicuous markings and closed when
14 not in use.

15 (5) Shutoff valves located within one inch of the tank
16 shell on each connection through which liquid can normally
17 flow.

18 (e) Tanks with manual gauging.--When tanks are provided with
19 openings for manual gauging, liquid-tight caps or covers shall
20 be provided and shall be kept closed when not open for gauging.

21 (f) Capacity of containers.--Containers used for the
22 transport of diesel fuel shall not exceed a capacity of 500
23 gallons.

24 (g) Certain containers as permanent fixtures.--Containers,
25 other than safety cans, used for the transport of diesel fuel
26 shall be permanently fixed to the transportation unit.

27 (h) Method of transportation.--Diesel fuel transportation
28 units shall be transported individually and not with any other
29 cars, except that two diesel fuel transportation units up to a
30 maximum of 500 gallons each may be transported together.

1 (i) Prohibition.--Diesel fuel shall not be transported on
2 conveyor belts.

3 (j) Fire extinguisher.--When transporting diesel fuel in
4 containers other than safety cans, a fire extinguisher shall be
5 provided on each end of the transportation unit. The fire
6 extinguishers shall be multipurpose type dry-chemical fire
7 extinguishers containing a nominal weight of 20 pounds.

8 (k) Fire suppression systems for diesel transportation
9 units.--Diesel fuel transportation units shall have a fire
10 suppression system that meets the requirements of section 408.

11 (l) Limitations where trolley wires are present.--In mines
12 where trolley wire is used, diesel fuel transportation units
13 shall be provided with insulating material to protect the units
14 from any energized trolley wire, and the distance between the
15 diesel fuel transportation unit and the trolley wire shall not
16 be less than 12 inches, or the trolley wire shall be de-
17 energized when diesel fuel transportation units are transported
18 through the area.

19 (m) Parking restrictions.--Unattended diesel fuel
20 transportation units shall be parked only in underground diesel
21 fuel storage facilities.

22 (n) Emergency fueling restrictions.--Safety cans shall be
23 used for emergency fueling only.

24 (o) Standards for safety cans.--Safety cans shall be clearly
25 marked, have a maximum capacity of five gallons, be constructed
26 of metal and be equipped with a nozzle and self-closing valves.
27 Section 408. Fire suppression for equipment and transportation.

28 (a) General rule.--Fire suppression systems for diesel-
29 powered equipment and fuel transportation units shall meet the
30 requirements of this section.

1 (b) Type system.--The system must be an automatic
2 multipurpose dry-powder type fire suppression system suitable
3 for the intended application and listed or approved by a
4 nationally recognized independent testing laboratory.

5 Installation requirements shall be as follows:

6 (1) The system shall be installed in accordance with the
7 manufacturer's specifications and the limitations of the
8 listing or approval.

9 (2) The system shall be installed in a protected
10 location or guarded to minimize physical damage from routine
11 operations.

12 (3) Suppressant agent distribution tubing or piping of
13 the system shall be secured and protected against damage,
14 including pinching, crimping, stretching, abrasion and
15 corrosion.

16 (4) Discharge nozzles of the system shall be positioned
17 and aimed for maximum fire suppression effectiveness in the
18 protected areas. Nozzles shall also be protected against the
19 entrance of foreign materials, such as mud, coal dust or rock
20 dust that could prevent proper discharge of suppressant
21 agent.

22 (c) Automatic fire detection and suppression.--The fire
23 suppression system shall provide automatic fire detection and
24 suppression for all of the following:

25 (1) The engine, transmission, hydraulic pumps and tanks,
26 fuel tanks, exposed brake units, air compressors and battery
27 areas, as applicable, on all diesel-powered equipment.

28 (2) Fuel containers and electric panels or controls used
29 during fuel transfer operations on fuel transportation units.

30 (d) Fault and fire alarm annunciators.--The fire suppression

1 system shall include a system fault and fire alarm annunciator
2 that can be seen and heard by the equipment operator.

3 (e) Automatic engine shutdown.--The fire suppression system
4 shall provide for automatic engine shutdown. Engine shutdown and
5 discharge of suppressant agent may be delayed for a maximum of
6 15 seconds after the fire alarm annunciator alerts the operator.

7 (f) Manual actuators.--At least two manual actuators shall
8 be provided, with at least one manual actuator at each end of
9 the equipment. If the equipment is provided with an operator's
10 compartment, one of the mechanical actuators shall be located in
11 the compartment within easy reach of the operator. For
12 stationary equipment, the two manual actuators shall be located
13 with at least one actuator on the stationary equipment and at
14 least one actuator a safe distance away from the equipment and
15 in intake air.

16 Section 409. Fire suppression for storage areas.

17 (a) General rule.--Fire suppression systems for diesel fuel
18 storage areas shall meet the requirements of this section.

19 (b) Type system.--The system shall be an automatic
20 multipurpose dry-powder type fire suppression system or other
21 system of equal capability, suitable for the intended
22 application and listed or approved by a nationally recognized
23 independent testing laboratory. The system shall meet the
24 following installation requirements:

25 (1) The system shall be installed in accordance with the
26 manufacturer's specifications and the limitations of the
27 listing or approval.

28 (2) The system shall be installed in a protected
29 location or guarded to minimize physical damage from routine
30 operations.

1 (3) Suppressant agent distribution tubing or piping of
2 the system shall be secured and protected against damage,
3 including pinching, crimping, stretching, abrasion and
4 corrosion.

5 (4) Discharge nozzles of the system shall be positioned
6 and aimed for maximum fire suppression effectiveness in the
7 protected areas. Nozzles shall also be protected against the
8 entrance of foreign materials, such as mud, coal dust and
9 rock dust that could prevent proper discharge of suppressant
10 agent.

11 (c) Automatic fire detection and suppression.--The fire
12 suppressant system shall provide automatic fire detection and
13 suppression for the fuel storage tanks, containers, safety cans,
14 pumps, electrical panels and control equipment in fuel storage
15 areas.

16 (d) Types of alarms.--Audible and visual alarms to warn of
17 fire or system faults shall be provided at the protected area
18 and at a surface location that is always staffed when persons
19 are underground. A means shall also be provided for warning all
20 endangered persons in the event of fire.

21 (e) Manual actuators.--Fire suppression systems shall
22 include two manual actuators with at least one located within
23 the fuel storage facility and at least one located a safe
24 distance away from the storage facility and in intake air.

25 (f) System operation.--The fire suppression system shall
26 remain operative in the event of electrical system failure.

27 (g) Monitoring of certain systems.--If electrically
28 operated, the detection and actuation circuits shall be
29 monitored and provided with status indicators showing power and
30 circuit continuity. If not electrically operated, a means shall

1 be provided to indicate the functional readiness status of the
2 system.

3 (h) Weekly visual inspection.--Fire suppression devices
4 shall be visually inspected at least once each week by a person
5 qualified to make the inspection.

6 (i) Maintenance, testing and records.--Each fire suppression
7 device shall be tested and maintained. A record shall be
8 maintained of the inspection required by this subsection. The
9 record of the weekly inspections shall be maintained at an
10 appropriate location for each fire suppression device.

11 (j) (Reserved).

12 (k) Instructions.--All miners normally assigned to the
13 active workings of a mine shall be instructed about any hazards
14 inherent to the operation of all fire suppression devices
15 installed and, where appropriate, the safeguards available for
16 each device.

17 Section 410. Use of certain starting aids prohibited.

18 The use of volatile or chemical starting aids is prohibited.

19 Section 411. Fueling.

20 (a) Restrictions on fueling locations.--Fueling of diesel-
21 powered equipment shall not be conducted in the intake escape-
22 way unless the mine design and entry configuration make it
23 necessary. In those cases where fueling in the intake escape-way
24 is necessary, the mine operator shall submit a plan for approval
25 to the secretary, which shall be investigated by the technical
26 advisory committee in accordance with section ~~402~~ 424, outlining <—
27 the special safety precautions that will be taken to insure the
28 protection of miners. The submitted plan shall specify a
29 location, such as the end of the tail piece track or adjacent to
30 the load out point, where fueling shall be conducted in the

1 intake escape-way and all other safety precautions that shall be
2 taken, which shall include an examination of the area for
3 spillage or fire by a qualified person.

4 (b) Spill cleanup.--Diesel fuel and other combustible
5 materials shall be cleaned up and not be permitted to accumulate
6 anywhere in an underground mine or on diesel-powered or electric
7 equipment located in a mine.

8 (c) Trained person on duty.--At least one person specially
9 trained in the cleanup and disposal of diesel fuel spills shall
10 be on duty at the mine when diesel-powered equipment or mobile
11 fuel transportation equipment is being used or when any fueling
12 of diesel-powered equipment is being conducted.

13 Section 412. Fire and safety training.

14 (a) Training of underground employees.--All underground
15 employees at the mine shall receive special instruction related
16 to fighting fires involving diesel fuel. This training may be
17 included in annual refresher training under MSHA regulations at
18 30 CFR Part 48 (relating to training and retraining of miners)
19 or included in the fire drills required under MSHA regulations
20 relating to program of instruction; location and use of fire
21 fighting equipment; location of escape-ways, exits and routes of
22 travel; evacuation procedures; and fire drills.

23 (b) Training of miners.--All miners shall be trained in
24 precautions for safe and healthful handling and disposal of
25 diesel-powered equipment filters. All used intake air filters,
26 exhaust diesel particulate matter filters and engine oil filters
27 shall be placed in their original containers or other suitable
28 enclosed containers and removed from the underground mine to the
29 surface. Arrangements shall be made for safe handling and
30 disposal of these filters within a timely manner after they have

1 reached the surface.

2 Section 413. Maintenance.

3 (a) General rule.--Diesel-powered equipment shall be
4 maintained in an approved and safe condition as described in
5 this chapter or removed from service. Failure of the mine
6 operator to comply with the maintenance requirements of this
7 subsection may result in revocation of the secretary's approval
8 of the complete diesel-powered equipment package, provided
9 appropriate notification has been given to the mine operator and
10 the procedures of this section have been followed. Upon
11 receiving the appropriate notification, the mine operator shall
12 have 30 days to submit a plan to achieve and maintain
13 compliance. The plan shall be evaluated by the secretary and,
14 upon approval, the mine operator shall implement the plan. The
15 secretary shall monitor the mine operator's compliance. If the
16 secretary then determines that the mine operator is unable or
17 unwilling to comply, the secretary shall revoke the mine
18 operator's approval.

19 (b) Acquisition and maintenance of approvals.--To acquire
20 and maintain approval of a complete diesel-powered equipment
21 package, the mine operator shall comply with the following
22 requirements:

23 (1) All service, maintenance and repairs of approved
24 complete diesel-powered equipment packages shall be performed
25 by mechanics who are trained and qualified in accordance with
26 section 422.

27 (2) Service and maintenance of approved complete diesel-
28 powered equipment packages shall be performed according to:

29 (i) the specified routine maintenance schedule;

30 (ii) onboard performance and maintenance diagnostics

1 readings;

2 (iii) emissions test results; and

3 (iv) component manufacturers' recommendations.

4 Section 414. Records.

5 (a) General rule.--A record shall be made of all emissions
6 tests, preoperational examinations and maintenance and repairs
7 of complete diesel-powered equipment packages. The records made
8 pursuant to this section shall meet the requirements of this
9 section.

10 (b) Written certification.--The person performing the
11 emissions test, examination, maintenance or repair shall certify
12 by date, time, engine hour reading and signature that the
13 emissions test, examination, maintenance or repair was made.

14 (c) Results.--Records of emissions tests and examinations
15 shall include the specific results of such tests and
16 examinations.

17 (d) Content.--Records of maintenance and repairs shall
18 include the work that was performed, any fluids or oil added,
19 parts replaced or adjustments made and the results of any
20 subsequently required emissions testing.

21 (e) Preoperational examination record retention.--Records of
22 preoperational examinations shall be retained for the previous
23 100-hour maintenance cycle.

24 (f) Certain records to be countersigned.--Records of
25 emissions tests, 100-hour maintenance tests and repairs shall be
26 countersigned once each week by the certified mine electrician
27 or mine foreman.

28 (g) Other record retention.--Except as specified in
29 subsection (e), all records required by this section shall be
30 retained for at least one year at a surface location at the mine

1 and made available for inspection by the department and by
2 miners and their representatives.

3 Section 415. Duties of equipment operator.

4 (a) Preoperational examination.--Prior to use of a piece of
5 diesel-powered equipment during a shift, an equipment operator
6 shall conduct an examination as follows:

7 (1) Check the exhaust emissions control and conditioning
8 system components to determine that the components are in
9 place and not damaged or leaking.

10 (2) Assure that the equipment is clean and free of
11 accumulations of combustibles.

12 (3) Assure that the machine is loaded safely.

13 (4) Check for external physical damage.

14 (5) Check for loose or missing connections.

15 (6) Check engine oil level.

16 (7) Check transmission oil level.

17 (8) Check other fluid levels, if applicable.

18 (9) Check for hydraulic, coolant and oil leaks.

19 (10) Check fan, water pump and other belts.

20 (11) Check the fan for damage.

21 (12) Check guards.

22 (13) Check the fuel level.

23 (14) Check for fuel leaks.

24 (15) Comply with recordkeeping requirements pursuant to
25 section 414.

26 (b) Operational examination.--After the engine is started
27 and warmed up, the equipment operator shall conduct an
28 examination as follows:

29 (1) Check all onboard engine performance and maintenance
30 diagnostics system gauges for proper operation and in-range

1 readings. The equipment operator shall immediately shut down
2 the engine and notify the operator if the onboard readings
3 indicate any of the following:

4 (i) Intake restriction at full engine speed is
5 greater than the manufacturer's recommendation.

6 (ii) Exhaust restriction at full engine speed is
7 greater than the manufacturer's recommendation.

8 (iii) Coolant temperature is at or near 212 degrees
9 Fahrenheit.

10 (iv) Low engine oil pressure.

11 (v) High engine oil temperature.

12 (2) Check safety features, including, but not limited
13 to, the throttle, brakes, steering, lights and horn.

14 (3) Comply with recordkeeping requirements pursuant to
15 section 414.

16 Section 416. Schedule of maintenance.

17 At intervals not exceeding 100 hours of engine operation, a
18 qualified mechanic shall perform the following maintenance and
19 make all necessary adjustments or repairs or remove the
20 equipment from service:

21 (1) Wash or steam clean the equipment.

22 (2) Check for and remove any accumulations of coal, coal
23 dust or other combustible materials.

24 (3) Check the equipment for damaged or missing
25 components or other visible defects.

26 (4) Conduct electrical and safety component inspections.

27 (5) Replace engine oil and oil filter.

28 (6) Check the transmission oil level and add oil, if
29 necessary.

30 (7) Check hydraulic oil level and add oil, if necessary.

1 (8) Check the engine coolant level and add coolant, if
2 necessary.

3 (9) Check all other fluid levels and add fluid, if
4 necessary.

5 (10) Check for oil, coolant and other fluid leaks.

6 (11) Inspect the cooling fan, radiator and shroud.

7 Remove any obstructions and make necessary repairs.

8 (12) Check all belts. Tighten or replace, if necessary.

9 (13) Check the battery and service as necessary.

10 (14) Check the automatic fire suppression system.

11 (15) Check the portable fire extinguisher.

12 (16) Check the lights.

13 (17) Check the warning devices.

14 (18) With the engine operating, check and replace or
15 repair the following:

16 (i) Oil pressure.

17 (ii) Intake air restriction at full engine speed.

18 (iii) Exhaust gas restriction at full engine speed.

19 (iv) Exhaust flame arrestor.

20 (v) All gauges and controls.

21 (19) Conduct repeatable loaded engine-operating test in
22 accordance with section 418.

23 (20) If the equipment is approved with a nondisposable
24 diesel particulate filter, a smoke dot test of the filtered
25 exhaust must be performed at this time. The results of the
26 smoke dot test shall be recorded on the 100-hour emissions
27 form. If the interpreted smoke dot number is greater than
28 three, the technical advisory committee shall be notified and
29 shall investigate to determine if the filter is functioning
30 properly.

1 (21) Evaluate and interpret the results of all of the
2 above tests and examinations and make all necessary repairs
3 or remove the equipment from service.

4 (22) Comply with the recordkeeping requirements pursuant
5 to section 414.

6 Section 417. Emissions monitoring and control.

7 (a) General rule.--Emissions for diesel-powered equipment
8 shall be monitored and controlled as provided in this section.

9 (b) Determination of baseline emission values.--When any
10 diesel-powered equipment first enters service at a mine,
11 baseline emission values shall be determined by a qualified
12 mechanic. Unless the technical advisory committee in accordance
13 with section 424 recommends an alternate procedure, the
14 qualified mechanic shall:

15 (1) Verify that the seal on the engine fuel injector is
16 in place and that the proper fuel pump is on the equipment.

17 (2) Install a new clean intake air cleaner, measure and
18 record the intake restriction pressure.

19 (3) Check the level of engine oil.

20 (4) Change the engine lubrication oil if not fresh.

21 (5) Check the level of the transmission fluid.

22 (6) Measure and record the exhaust backpressure. If
23 exhaust gas back pressure is above that recommended by the
24 manufacturer, steps must be taken to bring the exhaust gas
25 back pressure within the manufacturer's recommended limit
26 prior to beginning the test described in this subsection.

27 (7) Test the brakes.

28 (8) Place the equipment into an intake entry.

29 (9) Set the brakes and chock the wheels.

30 (10) Install an exhaust gas analyzer into the untreated

1 exhaust gas port.

2 (11) Start the engine and allow it to warm up to
3 operating temperature.

4 (12) Put the engine into a loaded condition. For this
5 section, the loaded condition for the baseline emissions
6 testing shall be determined by the technical advisory
7 committee by determining CO2 values that are representative
8 of the MSHA lug curve readings for that engine model and
9 horsepower.

10 (13) Start the exhaust gas analyzer and allow the engine
11 to operate in the loaded condition for a sufficient length of
12 time not less than a 90-second duration to insure proper CO
13 readings. The qualified mechanic shall record both CO and CO2
14 readings. Note: Baseline CO values shall be determined by the
15 technical advisory committee based upon MSHA lug curve
16 readings for that engine model and horsepower. If the
17 baseline CO values are greater than the MSHA lug curve
18 values, the technical advisory committee shall investigate
19 and either recommend approval or disapproval or recommend
20 alternate methods of meeting the requirements of this
21 section.

22 (14) Comply with recordkeeping requirements pursuant to
23 section 414.

24 (15) An alternative to the testing provided in
25 paragraphs (1) through (14) may be developed by the technical
26 advisory committee in accordance with section 424.

27 (16) Emissions test procedures for this section shall be
28 submitted to the technical advisory committee in accordance
29 with section 424 prior to being implemented for each engine
30 and equipment type.

1 Section 418. Diagnostic testing.

2 (a) Tests.--At intervals not exceeding once every 100 hours
3 of engine operation, a qualified mechanic shall perform
4 equipment maintenance diagnostic testing of each piece of
5 diesel-powered equipment in the mine. The qualified mechanic
6 shall do all of the following:

7 (1) Verify the identification numbers on the equipment.

8 (2) Check the level of the engine lubricating oil.

9 (3) Check the level of the transmission fluid.

10 (4) Set the brakes and chock the wheels.

11 (5) Install the portable carbon monoxide sampling device
12 into the untreated exhaust port coupling provided in the
13 operator's cab.

14 (6) Start the engine and allow it to warm up to
15 operating temperature.

16 (7) Check the intake restriction and the exhaust back
17 pressure at high idle speed.

18 (8) If the intake restriction is more than the
19 manufacturer's maximum recommended intake restriction,
20 replace the intake filter with a clean one.

21 (9) If exhaust gas back pressure is above that
22 recommended by the manufacturer, take steps to bring the
23 exhaust gas back pressure within the manufacturer's
24 recommended limit prior to beginning the test described in
25 this section.

26 (10) Put the engine into a loaded condition. As used in
27 this paragraph, the term loaded condition shall mean a
28 condition in which the carbon dioxide values are
29 representative of the MSHA lug curve values for that engine
30 model and horsepower rating.

1 (11) Take the following steps:

2 (i) Start the exhaust gas analyzer.

3 (ii) Allow the engine to operate for a sufficient
4 time, not less than 90 seconds, to insure proper carbon
5 monoxide readings and record both carbon monoxide and
6 carbon dioxide readings.

7 (12) Install the exhaust gas analyzer into the treated
8 exhaust port and repeat steps set forth in paragraphs (10)
9 and (11).

10 (13) If the average carbon monoxide reading for
11 untreated exhaust gas is greater than twice the baseline
12 established under section 417(b) or if the average carbon
13 monoxide reading for treated exhaust gas is greater than 100
14 ~~pounds per minute~~ PARTS PER MILLION, the equipment has failed <—
15 and shall be serviced and retested before it is returned to
16 regular service.

17 (14) Comply with recordkeeping requirements under
18 section 414.

19 (b) Procedures.--Emissions test procedures for this section
20 must be submitted to the technical advisory committee under
21 section 424 prior to being implemented for each engine and
22 equipment type.

23 (c) Alternative procedure.--An alternative to the testing
24 provided in subsection (a) may be developed by the technical
25 advisory committee under section 424.

26 Section 419. Exhaust gas monitoring and control.

27 (a) Concentration.--In monitoring and controlling exhaust
28 gases, the ambient concentration of exhaust gases in the mine
29 atmosphere shall not exceed 35 parts per million for carbon
30 monoxide and three ~~pounds per minute~~ PARTS PER MILLION for <—

1 nitrogen dioxide. The concentration of these exhaust gases shall
2 be measured at the equipment operator's or equipment attendant's
3 position and by the last piece of diesel-powered equipment
4 operating in the same split of air. Measurements shall be made
5 weekly or more often if necessary by a qualified person and
6 shall be conducted under the requirements of this section.

7 (b) Measurement.--Measurement of exhaust gases shall be made
8 with a sampling instrument no less precise than detector tubes.

9 (c) Changes.--If the concentration of a gas listed in
10 subsection (a) is at least 75% of its exposure limit, changes to
11 the use of the diesel equipment, the mine ventilation or the
12 mining process shall be made.

13 (d) Excessive exposure.--If the concentration of a gas
14 listed in subsection (a) exceeds the exposure limit, the diesel
15 equipment operating in that split shall be removed from service
16 immediately, and corrective action shall be taken. After
17 corrective action has been taken by the mine operator, the
18 diesel equipment may be returned to service in its regular
19 operating mode for emissions testing purposes only; and
20 emissions testing shall be conducted immediately to assure that
21 the concentration does not exceed 75% of the exposure limit.
22 Corrective action shall be taken until the concentration does
23 not exceed 75% of the exposure limit before the diesel equipment
24 can be returned to full operation.

25 (e) Compliance.--The mine operator shall comply with the
26 following requirements:

27 (1) Repair or adjustment of the fuel injection system
28 shall only be performed by qualified mechanics authorized by
29 the engine manufacturer.

30 (2) Complete testing of the emissions system in

1 accordance with section 418 shall be conducted:

2 (i) prior to any piece of diesel-powered equipment
3 being put into service; and

4 (ii) after any repair or adjustment to the fuel
5 delivery system, engine timing or exhaust emissions
6 control and conditioning system.

7 (3) Service and maintenance of the intake air filter,
8 exhaust particulate filter and the exhaust system shall be
9 performed at specific time intervals based on the component
10 manufacturer's recommendation and compliance with the engine
11 or emissions control operation specifications and, as needed,
12 based on the on-board diagnostics or emissions test results.
13 Accurate records shall be maintained of service and
14 maintenance under this paragraph.

15 Section 420. Training and general requirements.

16 (a) Approval.--Training course instructors and training
17 plans required by this section shall be approved by the
18 secretary. Operator training and qualification shall meet the
19 requirements of this section.

20 (b) Conduct.--

21 (1) Training shall be conducted in the basics of the
22 operation of a diesel engine, Federal and State regulations
23 governing their use, company rules for safe operation,
24 specific features of each piece of equipment and the ability
25 to recognize problems.

26 (2) Training shall be provided to each equipment
27 operator and the mine health and safety committee if one
28 exists. This training shall be designed to bring every
29 operator to a level of good understanding of diesel equipment
30 operation.

1 (3) Each operator shall be qualified by attending a
2 minimum eight-hour course, including classroom training on
3 diesel fundamentals and equipment-specific hands-on training
4 on the job. Training shall include instruction in the
5 following classroom subjects:

6 (i) Engine fundamentals. This subparagraph includes
7 an introduction to the function of a diesel engine and
8 recognition of major components and their functions.

9 (ii) Diesel regulations. This subparagraph includes
10 an introduction to Federal and State regulations
11 governing the use of diesel equipment.

12 (iii) Diesel emissions. This subparagraph includes
13 an introduction to diesel emissions and their adverse
14 health effects.

15 (iv) Factors which affect diesel emissions. This
16 subparagraph includes a detailed presentation of engine
17 faults and diesel fuel quality, their effect on emissions
18 and the preventive actions which can be taken to minimize
19 emissions levels.

20 (v) Emissions control devices. This subparagraph
21 includes a detailed presentation of the different
22 emissions control devices employed to reduce emissions
23 and details about actions the operator must take to keep
24 the devices in working order.

25 (vi) Diagnostic techniques. This subparagraph
26 includes a presentation of techniques which can be
27 employed by the operator to assure the equipment is in
28 safe operating condition and instruction about how to
29 recognize and diagnose certain engine faults which may
30 cause increases in emissions.

1 (vii) Preoperational inspection. This subparagraph
2 includes a presentation of the purpose, benefits and
3 requirements of the preoperational inspection.

4 (viii) Ventilation. This subparagraph includes an
5 introduction to special ventilation requirements for
6 areas where diesel-powered equipment will operate.

7 (ix) Fire suppression system. This subparagraph
8 includes an introduction to the fire suppression system
9 and its function and when and how to activate the fire
10 suppression manually.

11 (x) Operating rules. This subparagraph includes a
12 detailed presentation of the driving rules, safe driving
13 speeds, traffic control devices and equipment
14 limitations.

15 (xi) Emergency procedures. This subparagraph
16 includes discussion of:

17 (A) emergencies, such as fire, diesel fuel
18 spills, component failure, loss of ventilation air
19 and emergency escape procedures; and

20 (B) potential use of the diesel-powered vehicle
21 as an emergency escape vehicle in case of a mine
22 emergency.

23 (xii) Recordkeeping and reporting procedures. This
24 subparagraph includes a presentation on required
25 recordkeeping and reporting procedures for problems or
26 unsafe conditions, high emissions levels and
27 preoperational inspections made by the equipment
28 operator.

29 (c) Certificate.--Upon successful completion of both
30 training sessions, the operator shall be issued a certificate of

1 qualification which qualifies the operator to operate a specific
2 type of diesel-powered equipment. An operator may be qualified
3 to operate more than one type of equipment by completing
4 additional equipment-specific training covering differences
5 specific to each additional type of equipment.

6 (d) Refresher training.--Refresher training, separate from
7 that required by MSHA regulations at 30 CFR Pt. 48 (relating to
8 the training and retraining of miners), shall be required
9 annually.

10 (e) Annual certificate.--A new certificate of qualification
11 shall be issued annually after the equipment operator has
12 received the annual refresher training.

13 Section 421. Equipment-specific training.

14 (a) Approval.--Training course instructors and training
15 plans required by this section must be approved by the
16 secretary.

17 (b) Description.--

18 (1) Equipment-specific hands-on orientation training
19 shall be given in an area of the mine where the equipment
20 will be operated. This orientation shall be specific to the
21 type and make of the diesel machine and shall be presented in
22 small groups.

23 (2) The following subjects shall be included in the
24 training:

25 (i) Equipment layout. This subparagraph includes
26 familiarization with the layout of the equipment, the
27 operator's compartments and the controls.

28 (ii) Preoperation inspection. This subparagraph
29 includes familiarization with the preoperation inspection
30 procedure and review of specific details of the

1 inspection and location of the components to be
2 inspected.

3 (iii) Equipment limitations. This subparagraph
4 includes instruction relating to equipment performance,
5 speeds, capacities and blind areas.

6 (iv) Operating areas. This subparagraph includes
7 instruction relating to areas in which the equipment may
8 be operated.

9 (v) Operation. This subparagraph includes
10 familiarization with the controls, gauges and warning
11 devices and safe operating limits of all indicating
12 gauges.

13 (vi) Refueling procedure. This subparagraph includes
14 familiarization with fuel handling, permissible refueling
15 areas, spill prevention, cleanup and potential hazards
16 from diesel fuel.

17 (vii) Emergency devices. This subparagraph includes
18 instruction relating to the location and use of the fire
19 extinguisher and fire suppression devices.

20 (viii) Driving practice. This paragraph includes
21 supervised operation of the equipment.

22 Section 422. Diesel mechanic training.

23 (a) Approval.--Training course instructors and training
24 plans required by this section must be approved by the
25 secretary.

26 (b) General rule.--Diesel mechanic training and
27 qualification shall meet the requirements of this section.

28 (c) Skills.--Diesel mechanics shall be trained and qualified
29 to perform maintenance, repairs and testing of the features of
30 diesel equipment certified by MSHA and the secretary.

1 (d) Qualification.--To be qualified, a diesel mechanic shall
2 successfully complete a minimum of 16 hours of a training
3 program approved by the secretary regarding the general
4 function, operation, maintenance and testing of emissions
5 control and conditioning components. The diesel mechanic shall
6 be qualified to perform these tasks on the specific machines
7 used at the mine or mines where they are employed. Additional
8 engine-specific training shall be provided to diesel mechanics
9 in accordance with a plan approved by the secretary.

10 (e) Retraining.--Annual retraining programs for diesel
11 mechanics shall be required and shall be approved by the
12 secretary. Retraining shall include refresher training as well
13 as new procedure and new technology training as necessary.
14 Retraining shall be separate from refresher training pursuant to
15 MSHA regulations at 30 CFR Pt. 48 (relating to training and
16 retraining of miners) and electrical training required by MSHA.

17 (f) Programs.--The minimum diesel mechanic training programs
18 shall include training in the following minimum subject
19 requirements:

20 (1) Federal and State requirements regulating the use of
21 diesel equipment.

22 (2) Company policies and rules related to the use of
23 diesel equipment.

24 (3) Emissions control system design and component
25 technical training.

26 (4) Onboard engine performance and maintenance
27 diagnostics system design and component technical training.

28 (5) Service and maintenance procedures and requirements
29 for the emissions control systems.

30 (6) Emissions testing procedures and evaluation and

1 interpretation of test results.

2 (7) Troubleshooting procedures for the emissions control
3 systems.

4 (8) Fire protection systems test and maintenance.

5 (9) Fire and ignition sources and their control and
6 elimination.

7 (10) Fuel system maintenance and safe fueling
8 procedures.

9 (11) Intake air system design and components technical
10 training and maintenance procedures.

11 (12) Engine shutdown device tests and maintenance.

12 (13) Special instructions regarding components, such as
13 the fuel injection system, which may only be repaired and
14 adjusted by a qualified mechanic who has received special
15 training and is authorized to make the repairs or adjustments
16 by the component manufacturer.

17 (14) Instruction on recordkeeping requirements for
18 maintenance procedures and emissions testing.

19 (15) Other subjects determined by the secretary to be
20 necessary to address specific health and safety needs.

21 Section 423. Operation of diesel-powered equipment.

22 (a) General rule.--In addition to other requirements of this
23 chapter, diesel-powered equipment shall be operated pursuant to
24 the standards set forth in this section.

25 (b) Attended equipment.--Diesel-powered equipment shall be
26 attended while in operation with the engine running in
27 underground mines.

28 (c) Idling.--Unnecessary idling of diesel-powered equipment
29 is prohibited.

30 (d) Access.--Roadways where diesel-powered equipment is

1 operated shall be maintained as free as practicable from bottom
2 irregularities debris and wet or muddy conditions, which affect
3 control of the equipment.

4 (e) Speed.--Operating speeds shall be consistent with
5 conditions of roadways, grades, clearances, visibility and
6 traffic and type of equipment used.

7 (f) Control.--Equipment operators shall have full control of
8 the mobile equipment while it is in motion.

9 (g) Traffic rules.--Traffic rules, including speed, signals
10 and warning signs, shall be standardized at each mine and
11 posted.

12 (h) Maintenance.--

13 (1) Diesel-powered equipment shall be maintained in a
14 safe operating condition which does not threaten health of
15 human beings.

16 (2) Diesel-powered equipment not maintained in
17 accordance with paragraph (1) or not maintained in accordance
18 with the engine or emissions control operating specifications
19 shall be removed from service immediately and shall not be
20 returned to service until all necessary corrective actions
21 have been taken.

22 Section 424. Technical advisory committee.

23 (a) Establishment.--The Technical Advisory Committee on
24 Diesel-Powered Equipment is established.

25 (b) Membership.--The advisory committee shall consist of two
26 members, who shall be residents of this Commonwealth.

27 (1) The Governor shall appoint one member to represent
28 the viewpoint of the coal operators in this Commonwealth
29 within 30 days from receipt of a list containing one or more
30 nominees submitted by the major trade association

1 representing coal operators in this Commonwealth.

2 (2) The Governor shall appoint one member to represent
3 the viewpoint of the working miners in this Commonwealth
4 within 30 days from receipt of a list containing one or more
5 nominees submitted by the highest ranking official within the
6 major employee organization representing coal miners in this
7 Commonwealth.

8 (c) Terms.--Each member of the technical advisory committee
9 shall be appointed for a term of three years. If renominated and
10 reappointed, a member may serve an unlimited number of
11 successive three-year terms.

12 (d) Functions.--The technical advisory committee has the
13 following functions:

14 (1) Advising the secretary regarding implementation of
15 this chapter.

16 (2) Evaluating alternative technology or methods for
17 meeting the requirements for diesel-powered equipment as set
18 forth in this chapter.

19 (3) Providing technical assistance to operators
20 regarding diesel equipment technologies.

21 (4) Conducting investigations relating to implementation
22 of this chapter.

23 (5) Providing training regarding diesel equipment
24 emission controls and emission testing.

25 (e) Compensation.--Members of the technical advisory
26 committee shall be compensated at the appropriate per diem rate
27 based on the prevailing formula administered by the
28 Commonwealth, but not less than \$150 per day, plus all
29 reasonable expenses incurred while performing their official
30 duties. Compensation shall be adjusted annually by the secretary

1 to account for inflation based on the rate of inflation
2 identified by the Consumer Price Index for All Urban Consumers,
3 Bureau of Labor Statistics. The individual member may waive his
4 right to all or part of the compensation set forth in this
5 provision.

6 (f) Meetings.--The technical advisory committee shall meet
7 at least twice during each calendar year.

8 (g) Quorum.--Actions of the technical advisory committee
9 require the participation of both members.

10 (h) Support.--

11 (1) The department shall make clerical support and
12 assistance available to enable the technical advisory
13 committee to carry out its duties. Upon the request of both
14 members of the technical advisory committee, the secretary
15 may draft proposed conditions of use and reports or perform
16 investigations.

17 (2) The department shall purchase for the technical
18 advisory committee equipment for testing diesel engine
19 exhaust emissions and measuring diesel engine surface
20 temperatures and exhaust gas temperatures. Alternative
21 technology or methods recommended by the technical advisory
22 committee or approved by the secretary shall not reduce or
23 compromise the level of health and safety protection afforded
24 by this chapter.

25 (i) Alternative technologies.--

26 (1) Upon application of a coal miner, coal mine operator
27 or diesel-related technology manufacturer, or on its own
28 motion, the technical advisory committee shall consider
29 requests for the use of alternative diesel-related health and
30 safety technologies with general underground mining industry

1 application which are consistent with this chapter. The
2 following apply:

3 (i) Upon receipt of an application, the technical
4 advisory committee shall conduct an investigation, which
5 shall include consultation with a representative of the
6 major trade association representing coal operators in
7 this Commonwealth and with a representative of the major
8 employee organization representing coal miners in this
9 Commonwealth.

10 (ii) Approval of an application made under this
11 subsection shall make the alternative technology or
12 method available for use by a coal mine operator in this
13 Commonwealth but shall not be construed to require that a
14 coal mine operator use the approved alternative
15 technology or method.

16 (2) Upon application of a coal mine operator, the
17 technical advisory committee shall consider site-specific
18 requests for use of alternative diesel-related health and
19 safety technologies. The committee's recommendations on
20 applications submitted under this subsection shall be on a
21 mine-by-mine basis. Upon receipt of a site-specific
22 application, the technical advisory committee shall conduct
23 an investigation, which shall include consultation with the
24 mine operator and the authorized representatives of the
25 miners at the mine. Authorized representatives of the miners
26 shall include a mine health and safety committee elected by
27 miners at the mine and an individual employed by an employee
28 organization representing miners at the mine or an individual
29 authorized as the representative of miners of the mine in
30 accordance with MSHA regulations at 30 CFR Pt. 40 (relating

1 to representative of miners). If there is no authorized
2 representative of the miners, the technical advisory
3 committee shall consult with a reasonable number of miners at
4 the mine.

5 (3) Within 180 days of receipt of an application for use
6 of alternative technologies or methods, the technical
7 advisory committee shall complete its investigation and make
8 a recommendation to the secretary. The technical advisory
9 committee members shall only recommend approval of an
10 application if, at the conclusion of the investigation, the
11 committee members have made a determination that the use of
12 the alternative technology or method will not reduce or
13 compromise the level of health and safety protection afforded
14 by this chapter. The time period under this paragraph may be
15 extended with the consent of the applicant.

16 (4) The technical advisory committee shall forward to
17 the secretary three possible recommendations:

18 (i) A unanimous recommendation to approve the
19 application for use of alternative technologies or
20 methods. A recommendation under this subparagraph must be
21 made in writing and include the results of the
22 investigation and specific conditions of use for the
23 alternative technology or method.

24 (ii) A unanimous recommendation to reject the
25 application for use of alternative technologies or
26 methods. A recommendation under this subparagraph must be
27 made in writing and outline in detail the basis for the
28 rejection.

29 (iii) A divided recommendation in which one member
30 of the technical advisory committee recommends approval

1 of the application for use of alternative technologies or
2 methods and one member of the advisory committee
3 recommends rejection of the application for use of
4 alternative technologies or methods. For a recommendation
5 under this subparagraph, each member of the committee
6 must submit a detailed report to the secretary within 14
7 days of the committee's vote outlining the member's
8 position for or against the application.

9 (5) The secretary shall proceed as follows:

10 (i) Alternative technologies or methods may be
11 approved by the secretary if they do not reduce or
12 compromise the level of health and safety protection
13 afforded by this chapter.

14 (ii) If a recommendation under paragraph ~~(2)(i)~~ ←—
15 (4)(I) or (ii) is forwarded to the secretary by the ←—
16 technical advisory committee, the secretary shall have 30
17 days in which to render a final decision adopting or
18 rejecting the advisory committee's recommendation and the
19 application.

20 (iii) The secretary may only approve or reject a
21 recommendation under paragraph (2) without modification
22 unless the modification is unanimously approved by the
23 technical advisory committee.

24 (iv) If a recommendation under paragraph (2) is
25 forwarded to the secretary, the secretary shall convene,
26 within 30 days, a meeting with the members of the
27 technical advisory committee to discuss the reasons for
28 the divided recommendation and to determine whether
29 additional information and further discussion might
30 result in a unanimous recommendation by the committee.

1 (v) The following apply:

2 (A) The secretary shall render a decision on the
3 application within 30 days from the date of the
4 meeting with the technical advisory committee or, if
5 no meeting is convened, within 60 days of forwarding
6 of the recommendation.

7 (B) Upon consent of the applicant, the time
8 period under clause (A) may be extended.

9 (C) Except as set forth in clause (B), if the
10 secretary does not comply with the time requirements
11 to render a decision under this subparagraph, the
12 technical advisory committee's recommendation shall
13 be deemed rejected.

14 (6) Action taken by the secretary under this subsection
15 is subject to 2 Pa.C.S. Ch. 7 Subch. A (relating to judicial
16 review of Commonwealth agency action).

17 (j) Shaft and slope construction.--The secretary shall
18 establish, based on recommendations made by the technical
19 advisory committee, conditions of use for the use of diesel-
20 powered equipment in shaft and slope construction operations at
21 coal mines. Conditions of use proposed by the technical advisory
22 committee shall be considered by the secretary and shall be
23 adopted or rejected by the secretary without modification,
24 except as approved by the technical advisory committee.

25 CHAPTER 5

26 ENFORCEMENT AND REMEDIES

27 Section 501. Enforcement orders and duty to comply.

28 (a) Authority.--

29 (1) The department may issue written orders to enforce
30 this act, to effectuate the purposes of this act and to

1 protect the health and safety of miners and persons in and
2 about mines.

3 (2) An order issued under this act shall take effect
4 upon notice, unless the order specifies otherwise.

5 (3) An appeal to the Environmental Hearing Board shall
6 not act as a supersedeas.

7 (b) Compliance.--It is the duty of any person to whom an
8 order applies to comply with that order.

9 Section 502. Restraining violations.

10 (a) Department.--In addition to any other remedies provided
11 by law, the department may seek an injunction to restrain any of
12 the following:

13 (1) Violation of this act, a regulation promulgated
14 under this act or any approval, standard, order or permit
15 issued under this act.

16 (2) Creation and maintenance of a threat to the health
17 and safety of miners and persons in and about mines.

18 (b) Court.--

19 (1) In a proceeding under subsection (a), the court may
20 do any of the following:

21 (i) Issue an injunction if it finds reasonable cause
22 to believe that the respondent is engaging in conduct
23 which:

24 (A) violates this act; a regulation promulgated
25 under this act or any approval, standard or order
26 issued under this act; or

27 (B) poses a threat to the health and safety of
28 miners and persons in and about mines.

29 (ii) Levy civil penalties against the respondent.

30 (2) The courts of common pleas and the Commonwealth

1 courts are granted jurisdiction to hear and decide
2 proceedings brought under subsection (a).

3 (c) Bond.--The department is ~~be~~ NOT required to post bond in ←
4 connection with proceedings brought under this section.

5 Section 503. Administrative penalties.

6 (a) Declaration of threat.--The following actions by mine
7 officials are declared to pose an imminent and substantial
8 threat to the health and safety of miners:

9 (1) Assigning an employee without training or proper
10 certification.

11 (2) Requiring or condoning a violation of this act, a
12 regulation promulgated under this act or any approval,
13 standard or order issued under this act.

14 (3) Failing to perform a required examination.

15 (4) Failing to address promptly the dangers identified
16 through a mine examination or inspection by the department.

17 (5) Supplying inaccurate information to the department.

18 (6) Failing to notify the department as required by this
19 act.

20 (7) Failing to de-energize electrical power as required
21 by this act.

22 (8) Failing to evacuate the mine when required to do so
23 by a provision of this act.

24 (b) Penalty for mine officials and operator liability.--

25 (1) If the department finds that a mine official has
26 engaged in any of the actions under subsection (a), the
27 department may assess an administrative penalty of up to
28 \$2,500 against the mine official. In every instance in which
29 an administrative penalty is assessed against a mine
30 official, the department may assess ~~the same~~ AN ←

1 administrative penalty OF THE SAME AMOUNT against the
2 operator of the mine where the violations occurred.

3 (2) If the department finds that the operator directed
4 or condoned an unsafe act or a violation of the act:

5 (i) the department may assess an administrative
6 penalty of not less than \$10,000 and not more than
7 \$200,000 against the operator; and

8 (ii) the person that directed or condoned the action
9 shall be removed from any position of command and
10 control.

11 (c) Nonexclusive remedy.--Assessment of a penalty under this
12 section does not preclude the department from exercising any
13 other remedy available to it.

14 (d) Factors.--In determining the amount of a penalty, the
15 department shall consider the following:

16 (1) The degree to which the conduct was reckless or
17 intentional.

18 (2) Whether an individual was fatally or seriously
19 injured.

20 (3) The potential for the violation resulting in death
21 or serious injury to an individual.

22 (4) Whether the conduct is in violation of an
23 outstanding order.

24 (5) In the case of an operator, the economic benefit to
25 the operator from not complying with the applicable
26 requirements.

27 (e) Practice and procedure.--A penalty under this section is
28 subject to:

29 (1) 2 Pa.C.S. Chs. 5 Subch. A (relating to practice and
30 procedure of Commonwealth agencies) and 7 Subch. A (relating

1 to judicial review of Commonwealth agency action); and
2 (2) 25 Pa. Code Ch. 1021 (relating to practice and
3 procedures).

4 Section 503.1. Process for assessing administrative penalties.

5 (a) Assessment process.--If the department assesses an
6 administrative penalty, it shall inform the operator and mine
7 official, as applicable, of the amount of the penalty. The
8 person assessed with the penalty shall then have 30 days to pay
9 the penalty in full or, if the person wishes to contest the
10 amount of the penalty, the person shall, within the 30-day
11 period, file an appeal of the department's assessment with the
12 Environmental Hearing Board. Failure to appeal within 30 days
13 shall result in a waiver of all legal rights to contest the
14 amount of the penalty.

15 (b) Prepayment of administrative penalty.--If the operator
16 or mine official wishes to contest either the amount of the
17 penalty or the violation, the operator or mine official shall
18 forward an amount not greater than \$25,000 to the department for
19 placement in an escrow account with the State Treasurer or any
20 bank located in this Commonwealth, or post an appeal bond in the
21 amount of the proposed penalty provided that the bond shall be
22 executed by a surety licensed to do business in this
23 Commonwealth and is satisfactory to the department. If through
24 administrative or judicial review of the penalty, it is
25 determined that no violation occurred, or that the amount of the
26 penalty should be reduced, the department shall within 30 days
27 remit the appropriate amount to the operator or mine official,
28 with any interest accumulated by the escrow deposit. Failure to
29 forward the money or the appeal bond to the department within 30
30 days shall result in a waiver of all legal rights to contest the

1 violation or the amount of the penalty.

2 (c) Payment of penalty.--The amount assessed after
3 administrative hearing or waiver shall be payable to the
4 Commonwealth of Pennsylvania, Mine Safety Fund and shall be
5 collectible in any manner provided under law for the collection
6 of debts. If any person liable to pay any penalty neglects or
7 refuses to pay it after demand, the amount together with
8 interest and any costs that may accrue, shall constitute a
9 judgment in favor of the Commonwealth upon the property of the
10 person from the date it has been entered and docketed or
11 recorded by the prothonotary of the county where such property
12 is situated. The department may, at any time, transmit to the
13 prothonotaries of the respective counties certified copies of
14 the judgments, and it shall be the duty of each prothonotary to
15 enter and docket the judgments in the prothonotary's office, and
16 to index it as judgments are indexed, without requiring the
17 payment of costs as a condition precedent to the entry of the
18 judgment.

19 Section 504. Unlawful conduct.

20 It is unlawful for a person to do any of the following:

21 (1) Violate this act, a regulation under this act or any
22 approval, standard or order under this act.

23 (2) Cause or assist another in a violation under
24 paragraph (1).

25 (3) Hinder or threaten an agent or employee of the
26 department in the course of performance of a duty under this
27 act, including entry and inspection.

28 (4) Do any of the following on mine property:

29 (i) Venture into areas with unsupported roof.

30 (ii) Fail to make required gas checks.

1 (iii) Work on energized equipment without de-
2 energizing, locking out and tagging that equipment.

3 (iv) Change approved equipment without obtaining the
4 department's approval.

5 (v) Circumvent a safety device.

6 (vi) Disable an alarm.

7 (vii) Possess or use alcohol, drugs or smoking
8 materials in an unlawful manner on mine property.

9 (viii) Assign an employee without adequate training
10 to perform the assigned work.

11 (ix) Require or condone a violation of this act, a
12 regulation under this act or any approval, standard or
13 order under this act.

14 (x) Require or condone performance of an unsafe act.

15 (xi) Fail to perform a proper and required
16 examination.

17 (xii) Fail to abate promptly the dangers identified
18 through a mine examination or inspection by the
19 department.

20 (xiii) Supply inaccurate information to the
21 department.

22 (xiv) Fail to:

23 (A) notify the department as required by this
24 act;

25 (B) de-energize electrical power as required by
26 this act; or

27 (C) evacuate the mine when required.

28 Section 505. Criminal penalties.

29 (a) Prohibition.--A person commits a felony of the second
30 degree if all of the following apply:

1 (1) The person:
2 (i) violates this act, a regulation under this act
3 or any approval, standard or order under this act;
4 (ii) submits false information to the department; or
5 (iii) fails to notify the department as required by
6 this act.

7 (2) The action or inaction under paragraph (1):
8 (i) either results in the death of or substantial
9 bodily injury to an individual; or
10 (ii) creates a condition that poses a substantial
11 likelihood of causing death or substantial bodily injury
12 to an individual.

13 Section 506. Inspections.

14 (a) Administrative.--An agent or employee of the department
15 may do any of the following:

16 (1) Inspect a mine, property, building, premises, place,
17 book or record.

18 (2) Secure physical evidence. This paragraph includes
19 photography and videography.

20 (3) Conduct tests. This paragraph includes taking
21 samples.

22 (b) Warrant.--It shall be sufficient probable cause for a
23 court of competent jurisdiction to issue a search warrant if the
24 department establishes all of the following:

25 (1) The action under subsection (a) is pursuant to the
26 department's general inspection of mines and investigations
27 at mines.

28 (2) The agent or employee:

29 (i) has reason to believe that there has been a
30 violation of this act, a regulation under this act or any

1 approval, standard or order under this act of the
2 department has occurred or may occur; or
3 (ii) has been refused access or been prevented from
4 taking action under subsection (a).

5 Section 507. Intervention.

6 A person having an interest, which is or may be adversely
7 affected has the right without posting bond, to intervene in an
8 action or appeal brought by the department before the
9 Environmental Hearing Board under this act.

10 Section 508. Limitation of action.

11 (a) Civil and administrative.--Notwithstanding 42 Pa.C.S.
12 Ch. 55 Subch. B (relating to civil actions and proceedings) or
13 any other statutory provision to the contrary:

14 (1) A civil action under this act shall be commenced
15 within three years from the date the cause of action arises.

16 (2) An administrative action under this act shall be
17 commenced within three years from the date of the violation.

18 (b) Criminal.--Notwithstanding 42 Pa.C.S. Ch. 55 Subch. C
19 (relating to criminal proceedings) or any other statutory
20 provision to the contrary, a criminal action under this act
21 shall be commenced within three years from the date the offense
22 is committed.

23 Section 509. Relation to permit.

24 The following apply if the department finds that an operator
25 has demonstrated a lack of intent or ability to comply with this
26 act, a regulation under this act or any approval, standard or
27 order under this act:

28 (1) The department may take any action it deems
29 appropriate regarding the operator's permits, including
30 denial of applications for new, renewed or amended permits

1 and suspension or revocation of existing permits.

2 (2) Before taking action under paragraph (1), the
3 department shall provide the operator with an opportunity to
4 demonstrate to the department the operator's intent and
5 ability to comply.

6 Section 510. Certification actions.

7 (a) Denial.--The department shall not issue a certification
8 if, after investigation and an opportunity for an informal
9 hearing, it finds that the applicant lacks the ability or intent
10 to comply with this act.

11 (b) Sanctions.--

12 (1) The department may modify, suspend or revoke a
13 certification under this act if it determines that the holder
14 has done any of the following:

15 (i) Failed to comply with this act; a regulation
16 under this act or any approval, standard or order under
17 this act.

18 (ii) Interfered with the safe and lawful operation
19 of any mine.

20 (iii) Engaged in unlawful conduct under this act.

21 (2) An appeal to the Environmental Hearing Board shall
22 be treated as a petition for a supersedeas.

23 (3) This subsection is subject to 2 Pa.C.S. Chs. 5
24 Subch. A (relating to practice and procedure of Commonwealth
25 agencies) and 7 Subch. A (relating to judicial review of
26 Commonwealth agency action).

27 (c) Retesting.--A mine official whose certificate has been
28 revoked shall have the right after five years of work experience
29 in an underground bituminous coal mine, two years of which must
30 be in a working section, to be reexamined and upon receipt of a

1 satisfactory score on the examination, the mine official shall
2 be given another certificate of qualification.

3 (d) Other remedies.--This section is in addition to any
4 other remedy afforded the department under this act or any other
5 provision of law.

6 Section 511. Withdrawal of certification.

7 If a superintendent receives information that any mine
8 foreman, assistant mine foreman, mine examiner or mine
9 electrician neglects duties or is incapacitated, the
10 superintendent shall make a thorough investigation. If the
11 superintendent finds evidence to sustain neglect or incapacity,
12 the superintendent shall suspend the individual and inform the
13 department.

14 CHAPTER 6

15 EMERGENCY MEDICAL PERSONNEL

16 Section 601. Definitions.

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

20 "Emergency medical technician." A coal mine employee who has
21 successfully completed the course on emergency first aid care
22 and transportation of the sick and injured recommended by the
23 American Academy of Orthopedic Surgeons OR AN EQUIVALENT ←
24 ORGANIZATION and who has been certified by the Department of
25 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

1 employed at every mine as follows:

2 (1) At least one emergency medical technician shall be
3 on duty at any time when miners at that mine are engaged in
4 the extraction, production or preparation of coal. Emergency
5 medical technicians shall be on duty at a mine in sufficient
6 numbers to assure that no miner shall work in a mine location
7 which cannot be reached in 30 minutes by an emergency medical
8 technician. Emergency medical technicians shall be employed
9 at their regular duties at locations convenient for quick
10 response to emergencies and shall have available to them at
11 all times necessary equipment in compliance with Federal
12 regulations.

13 (2) Telephone services or the equivalent facilities
14 shall be installed which shall provide two-way voice
15 communications between the emergency medical technician at
16 the mine and medical personnel outside or away from the mine
17 who provide emergency medical services on a regular basis.

18 (3) Operators shall make adequate provisions so that at
19 least one emergency medical technician paramedic, registered
20 nurse, physician or physician assistant is available to
21 provide care at a mine at any time that persons are engaged
22 in extraction, production or preparation of coal. Emergency
23 medical personnel under this paragraph shall be on call to
24 reach the entrance of the mine within 30 minutes.

25 Section 603. Regulations for training and certification.

26 The Department of Health shall promulgate regulations to
27 train and certify emergency medical technicians and emergency
28 medical technician paramedics.

29 Section 604. First aid training of mine employees.

30 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.~~ WHERE THE ACTIONS CONSTITUTE GROSS <—
8 NEGLIGENCE, RECKLESS MISCONDUCT OR INTENTIONAL MISCONDUCT.

9 (b) Other medical personnel.--

10 (1) Except as set forth in paragraph (2), a certified
11 emergency medical technician, emergency medical technician
12 paramedic, registered nurse or physician assistant who in
13 good faith attempts to render emergency care to a sick or
14 injured individual in or about a mine shall not be liable for
15 civil damages as a result of any acts or omissions.

16 (2) Paragraph (1) does not apply ~~to an intentional or~~ <—
17 ~~grossly negligent tort.~~ WHERE THE ACTIONS CONSTITUTE GROSS <—
18 NEGLIGENCE, RECKLESS MISCONDUCT OR INTENTIONAL MISCONDUCT.

19 Section 609. Equivalent training.

20 If the department determines that an operator is presently
21 providing emergency medical care for its employees which is
22 equivalent to or superior to the emergency medical care provided
23 for under this chapter, the department shall make a finding that
24 the operator is in compliance with this chapter.

25 CHAPTER 7

26 SAFETY ZONES AND ENTOMBED WORKMEN

27 Section 701. Establishment.

28 A safety zone is established beneath and adjacent to every
29 stream, river and natural or artificial body of water in this
30 Commonwealth that is sufficiently large to constitute a hazard

1 to mining in the opinion and discretion of the department. In
2 the case of a stream or river, the safety zone shall extend
3 horizontally 200 feet from the high-water mark of each bank. In
4 the case of any other body of water sufficiently large to, in
5 the department's discretion, constitute a hazard to mining, the
6 safety zone shall extend horizontally 200 feet from the known
7 perimeter. Each safety zone shall extend downward to the limit
8 of the workable beds.

9 Section 702. Written authorization.

10 (a) Requirement.--No mining or removal of minerals shall be
11 permitted within the safety zone unless authorization is
12 specifically granted in advance and in writing by the
13 department.

14 (b) Procedure.--Authorization shall only be granted upon
15 application of the operator. Application shall be accompanied by
16 four copies of a plan of the proposed mining operation. The plan
17 shall indicate the thickness of the unconsolidated strata, the
18 thickness of the rock strata and coal beds overlying the bed to
19 be mined, the thickness of the bed, the width of the mine
20 openings, the width of the pillars to be left and any other
21 special features that may be deemed necessary as affecting the
22 contemplated first mining.

23 (c) Examinations.--The department shall make periodic
24 examinations to determine the accuracy of plans, maps and
25 drawings submitted to it under the provisions of this section.

26 Section 703. Pillar recovery.

27 Pillar recovery may not be undertaken until the pillars are
28 approved by the department. Applications for pillar recovery
29 must be accompanied by four copies of a plan, which must include
30 such information as shall be determined by the department. The

1 approval or disapproval of the plan shall be based on the
2 factors of depth, the thickness of the bed, the percentage of
3 pillars proposed to be extracted and to be left, the effect on
4 pillars remaining in overlying beds and any other special
5 features deemed necessary by the department.

6 Section 704. Proof of rock cover.

7 (a) Requirement.--Proof of the existence of 35 feet of rock
8 cover must accompany any plan submitted under this chapter.

9 (b) Sufficiency.--Proof of rock cover is to be ascertained
10 by testing holes drilled on:

11 (1) intersecting lines forming rectangles or squares
12 where the cover thickness is less than 50 feet; and

13 (2) on spacing of not more than 35-foot centers.

14 Section 705. Verification.

15 Plans and proof of rock cover under this chapter must be
16 signed by a registered professional mining engineer representing
17 the operator and a registered professional mining engineer
18 representing the lessor or the owner.

19 Section 706. Approval or disapproval of plans.

20 (a) Approval.--If, after review, the department approves the
21 plan, it shall send copies of the approved plan to the
22 registered professional mining engineer representing the
23 operator and to the registered professional mining engineer
24 representing the lessor or the owner.

25 (b) Disapproval.--If, after review, the department
26 disapproves the plan, it shall send copies of the disapproval,
27 identifying its reasons for that action, to the registered
28 professional mining engineer representing the operator and a
29 registered professional mining engineer representing the lessor
30 or the owner.

1 Section 707. Notice.

2 After approval of the plan by the department, mining or
3 removal of minerals shall not begin within the safety zone until
4 the mine foreman has conspicuously posted a notice on the
5 outside of the mine and has orally notified each miner affected
6 that the miner is working within the safety zone.

7 Section 708. Entombed workmen.

8 If a workman is enclosed, entombed or buried in any coal mine
9 in this Commonwealth, the department, upon request of a
10 relative of the workman or the department, shall petition a
11 court of competent jurisdiction to order recovery of the body
12 and to make a decree that the workman is dead.

13 CHAPTER 31

14 MISCELLANEOUS PROVISIONS

15 Section 3101. Repeals.

16 (a) Absolute.--

17 (1) The General Assembly declares that the repeals under
18 paragraph (2) are necessary to effectuate this act.

19 ~~(2) The following acts and parts of acts are repealed~~ <—
20 ~~absolutely:~~

21 ~~(i) The act of June 30, 1947 (P.L.1177, No.490),~~
22 ~~known as The Coal Mine Sealing Act of 1947.~~

23 ~~(ii) (2) The act of July 17, 1961 (P.L.659, No.339),~~ <—
24 ~~known as the Pennsylvania Bituminous Coal Mine Act, IS~~ <—
25 ~~REPEALED.~~

26 ~~(iii) The act of July 9, 1976 (P.L.931, No.178),~~ <—
27 ~~referred to as the Coal Mine Emergency Medical Personnel~~
28 ~~Law.~~

29 (b) Inconsistent.--The following acts and parts of acts are
30 repealed to the extent they apply to bituminous coal mines:

1 (1) The act of May 9, 1889 (P.L.154, No.171), entitled
2 "An act to provide for the recovery of the bodies of workmen
3 enclosed, buried or entombed in coal mines."

4 (2) The act of June 3, 1943 (P.L.848, No.357), entitled
5 "An act providing that every mine foreman, assistant mine
6 foreman and fire boss, under the Bituminous Mining Laws and
7 the Anthracite Mining Laws of the Commonwealth, represents
8 and is an officer of the Commonwealth in the mine in which
9 employed, for the suspension or cancellation of the
10 certificates of such officials as shall hold same, and for
11 the disqualification of such as are uncertificated by the
12 Secretary of Mines after or prior to hearing, for failure or
13 refusal to perform his respective duties; defining the
14 procedure in such hearing and the powers of the Secretary of
15 Mines, with respect thereto, and providing for a review of
16 his decisions by courts of common pleas and the Superior
17 Court; providing for re-examination by the examining board of
18 any person whose certificate has been cancelled, and for
19 reinstatement of such as are uncertificated; and prohibiting
20 the employment by any operator in such capacity of any mine
21 foreman, assistant mine foreman or fire boss not possessing
22 the requisite certificate or whose certificate is suspended
23 or who has been disqualified."

24 (3) THE ACT OF JUNE 30, 1947 (P.L.1177, NO.490), KNOWN <—
25 AS THE COAL MINE SEALING ACT OF 1947.

26 ~~(3)~~ (4) The act of December 22, 1959 (P.L.1994, No.729), <—
27 entitled "An act prohibiting mining in certain areas without
28 prior approval by the Department of Mines and Mineral
29 Industries; establishing standards for the approval of plans
30 for mining in such areas; imposing powers and duties on the

1 mine foremen and the Department of Mines and Mineral
2 Industries; and providing penalties."

3 (5) THE ACT OF JULY 9, 1976 (P.L.931, NO.178), REFERRED ←
4 TO AS THE COAL MINE EMERGENCY MEDICAL PERSONNEL LAW.
5 Section 3102. Effective date.

6 This act shall take effect in ~~60~~ 180 days. ←