

No. 1996-182

AN ACT

HB 2828

Amending the act of July 17, 1961 (P.L.659, No.339), entitled "An act relating to bituminous coal mines; amending, revising, consolidating and changing the laws relating thereto; providing for the health and safety of persons employed in and about the bituminous coal mines of Pennsylvania and for the protection and preservation of property connected therewith; prescribing powers and duties in connection therewith; prescribing penalties; and repealing existing laws," providing standards and procedures for the use and maintenance of diesel-powered equipment; establishing the Technical Advisory Committee on Diesel-Powered Equipment; providing for the committee's powers and duties; creating a fund; and making editorial changes.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Section 103(13), (14) and (15) of the act of July 17, 1961 (P.L.659, No.339), known as the Pennsylvania Bituminous Coal Mine Act, are amended and the section is amended by adding clauses to read:

Section 103. Definitions.—Subject to additional definitions contained in the subsequent articles, or sections hereof, and unless the context otherwise requires in this act, the following words and terms shall have these meanings:

* * *

(13) "Department"—The Department of [**Mines and Mineral Industries organized and operating in the Commonwealth of Pennsylvania**] *Environmental Protection of the Commonwealth*, hereinafter referred to as the department.

(14) "Secretary [**of Mines and Mineral Industries**]"—The [**head of the Department of Mines and Mineral Industries appointed and commissioned by the Governor**] *Secretary of Environmental Protection of the Commonwealth or his designee*, hereinafter referred to as the secretary.

(15) "Deputy [**Secretary of Mines and Mineral Industries**] *secretary*"—A person appointed by the secretary, with approval of the Governor, to assist and aid the secretary in carrying out the provisions of this act, hereinafter referred to as the deputy secretary.

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(28) "**MSHA**"—*The Mine Safety and Health Administration within the United States Department of Labor.*

(29) "**DPEP**"—*Diesel-powered equipment package.*

(30) "**Advisory committee**"—*The Technical Advisory Committee on Diesel-Powered Equipment established in section 224-A.*

Section 2. Sections 104(a) and 113 of the act are amended to read:

Section 104. The Secretary and the Deputy Secretary.—(a) It shall be the duty of the secretary to **[devote the whole of his time to duties of his office, and to]** see that the mining laws of the Commonwealth are faithfully executed. The secretary shall appoint, with the approval of the Governor, a deputy secretary **[for the bituminous division]** to assist with his duties. The secretary and the deputy secretary are hereby invested with the same power and authority as the inspectors to enter and examine any mine within the Commonwealth, and the works and machinery connected therewith, and to give such aid and instruction to the inspectors from time to time as they may deem best calculated to protect the health and promote the safety of all persons employed in and about the mines.

* * *

Section 113. Electrical Inspector; Expenses.—Each electrical inspector may also incur traveling expenses[,] and such other expenses as may be necessary for the proper discharge of his duties under the provisions of this act. The secretary, through the Department of **[Property and Supplies] General Services**, shall purchase for the electrical inspectors such instruments and equipment as he deems necessary to assist them in carrying out the duties imposed upon them by this act.

Section 3. Section 123 of the act, amended December 21, 1973 (P.L.436, No.154), is amended to read:

Section 123. Discretionary Power of Mine Inspectors.—The mine inspector shall exercise sound discretion in the performance of his duties under the provisions of this act, and if the operator, superintendent, mine foreman, or other person employed in or about any mine, shall be dissatisfied with any decision the mine inspector has given in the discharge of his duties, which decision shall be in writing, it shall be the duty of the dissatisfied person to appeal from said decision to the secretary, who shall at once appoint a commission to accompany promptly the mine inspector in the district to make further examination into the matter in dispute. If the said commission shall agree with the decision of the mine inspector in the district, their decision shall be final and conclusive, unless an appeal is taken in accordance with the provisions of **[the act of June 4, 1945 (P.L.1388, No.442), known as the “Administrative Agency Law.”] 2 Pa.C.S. (relating to administrative law and procedure)**.

Section 4. Section 126(b) of the act is amended to read:

Section 126. Mine Rescue Station; Equipment; Instructors.—* * *

(b) The secretary, with the consent of the Governor, shall have the authority to purchase, through the Department of **[Property and Supplies] General Services**, two trucks equipped with the necessary breathing apparatus, gas masks, first-aid supplies, analytical apparatus and such other chemical and scientific instruments commonly used and necessary in the work of first aid and mine rescue. The secretary, with the consent of the Governor, shall also have the authority to purchase, through the Department of **[Property and Supplies] General Services**, such emergency mine rescue

trucks and equipment, as in his opinion shall be deemed necessary, for use in mine catastrophies.

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Section 5. Section 242(c) of the act, amended November 24, 1967 (P.L.544, No.266), is amended to read:

Section 242. Ventilation Requirements.—* * *

(c) Where belt conveyors are installed, main stoppings and regulators shall be so arranged as to reduce the quantity of air traveling in the belt conveyor entry to a minimum for effective ventilation and to provide an intake air split as an escapeway from the face area to the main air current.

This provision does not apply to approved mobile belt conveyors when such are considered part of the equipment required for face mining operations, provided doors are installed in all stoppings between the two belt conveyor entries to provide an escapeway in cases of fire, smoke, or any other emergency, providing the application submitted by the operator has the approval of a Commission of Mine Inspectors designated by the [Secretary of Mines and Mineral Industries.] *secretary*.

* * *

Section 6. Section 269(b) of the act is amended to read:

Section 269. Underground Equipment; Use and Maintenance.—* * *

(b) Underground equipment powered by internal combustion engines using petroleum products, alcohol, or any other compound shall not be used in a coal mine unless such equipment has been approved by the secretary for underground use in bituminous coal mines[.] *and the equipment is operated and maintained in compliance with Article II-A.*

* * *

Section 7. The act is amended by adding an article to read:

ARTICLE II-A.

DIESEL-POWERED EQUIPMENT

Section 201-A. Underground Use.—(a) Underground use of inby and outby diesel-powered equipment, including mobile equipment, stationary equipment and equipment of all horsepower ratings, may only be approved, operated and maintained as provided in this article, except for emergency fire-fighting equipment to be used specifically for that purpose.

(b) All diesel-powered equipment shall be attended while in operation with the engine running in underground mines. For purposes of this subsection, "attended" shall mean an equipment operator is within sight or sound of the diesel-powered equipment.

(c) Inby and outby diesel-powered equipment may be used in underground mines if the inby or outby diesel-powered equipment uses an engine approved or certified by MSHA, as applicable, for inby or outby use that, when tested at the maximum fuel-air ratio, does not require an MSHA approval plate ventilation rate exceeding 150 c.f.m. per rated horsepower.

Section 202-A. Diesel-Powered Equipment Package.—(a) All diesel-powered equipment shall be approved by the department as a complete diesel-powered equipment package which shall be subject to all of the requirements, standards and procedures set forth in this article.

(b) Diesel engines shall be certified or approved, as applicable, by MSHA and maintained in accordance with MSHA certification or approval and department approval.

Section 203-A. Exhaust Emissions Control.—(a) (1) Underground diesel-powered equipment shall include an exhaust emissions control and conditioning system that has been laboratory tested with the diesel engine, except as provided in paragraph (3), using the ISO 8178-1 test and has resulted in diesel particulate matter emissions that do not exceed an average concentration of 0.12 mg over m to the third power when diluted by fifty per cent of the MSHA approval plate ventilation rate for that diesel engine.

(2) The exhaust emissions control and conditioning system shall be required to successfully complete a single series of laboratory tests conducted at a laboratory accepted by the secretary for each diesel engine, except as provided in paragraph (3).

(3) An exhaust emissions control and conditioning system may be approved for multiple diesel engine applications through a single series of laboratory tests, known as the ISO 8178-1 test, only if data is provided to the advisory committee that reliably verifies that the exhaust emissions control and conditioning system will meet, for each diesel engine, the in-laboratory diesel particulate matter standard established by this subsection. Data provided to satisfy this provision shall include diesel particulate matter production rates for the specified engine as measured during the ISO 8178-1 test, if available. If ISO 8178-1 test data for diesel particulate matter production is not available for a specified engine, comparable data may be provided to the advisory committee that reliably verifies that the exhaust emissions control and conditioning system will meet, for the specified diesel engine, the in-laboratory diesel particulate matter standard established by this subsection. This standard shall only be used for in-laboratory testing for approval of diesel-powered equipment for use underground.

(b) The exhaust emissions control and conditioning system shall include the following:

(1) A diesel particulate matter (DPM) filter capable of an average of ninety-five per cent or greater reduction of DPM emissions.

(2) An oxidation catalyst or other gaseous emissions control device capable of reducing undiluted carbon monoxide emissions to 100 ppm or less under all conditions of operation at normal engine operating temperature range.

(3) An engine surface temperature control capable of maintaining significant external surface temperatures below three hundred two degrees Fahrenheit.

(4) *A heat exchanger capable of reducing the exhaust gas temperature below three hundred two degrees Fahrenheit.*

(5) *An automatic engine shutdown system that will shut off the engine before the exhaust gas temperature reaches three hundred two degrees Fahrenheit and, if waterjacketed components are used, before the engine coolant temperature reaches two hundred twelve degrees Fahrenheit. A warning shall be provided to alert the equipment operator prior to engine shutdown.*

(6) *A spark arrestor system.*

(7) *A flame arrestor system.*

(8) *A sampling port for measurement of undiluted and untreated exhaust gases as they leave the engine.*

(9) *A sampling port for measurement of treated undiluted exhaust gases before they enter the mine atmosphere.*

(10) *For inby diesel equipment, any additional requirements of MSHA regulations at 30 CFR Pt. 36 (relating to mobile diesel-powered transportation equipment for gassy noncoal mines and tunnels).*

(c) *On-board engine performance and maintenance diagnostics systems shall be capable of continuously monitoring and giving readouts for paragraphs (1), (2), (3), (4), (5), (6), (7) and (8) of this subsection. The diagnostics system shall identify levels that exceed the engine and/or component manufacturer's recommendation or the applicable MSHA or bureau requirements as to the following:*

(1) *Engine speed.*

(2) *Operating hour meter.*

(3) *Total intake restriction.*

(4) *Total exhaust back pressure.*

(5) *Cooled exhaust gas temperature.*

(6) *Coolant temperature.*

(7) *Engine oil pressure.*

(8) *Engine oil temperature.*

(d) *The DPEP shall include a quality control plan for assuring that the diesel fuel used shall be a low volatile hydrocarbon fuel classified as ASTM D975 fuel with a cetane index of at least 45, a maximum aromatic content of thirty-five per cent, a sulfur mass of less than five hundredths of one per cent and a flash point of one hundred degrees Fahrenheit or greater at standard temperature and pressure.*

Section 204-A. Ventilation.—(a) Minimum quantities of ventilating air where diesel-powered equipment is operated shall be maintained pursuant to this section.

(b) *Each specific model of diesel-powered equipment shall be approved by the department before it is taken underground. The department shall require an approval plate that must be attached to each piece of the diesel-powered equipment. The approval plate shall specify the minimum ventilating air quantity for the specific piece of diesel-powered equipment.*

The minimum ventilating air quantity shall be determined by the bureau based on the amount of air necessary at all times to maintain the exhaust emissions at levels not exceeding the exposure limits established in section 219-A.

(c) The minimum quantities of air in any split where any individual unit of diesel-powered equipment is being operated shall be at least that specified on the approval plate for that equipment. Air quantity measurements to determine compliance with this requirement shall be made at the individual unit of diesel-powered equipment.

(d) Where multiple units are operated, the minimum quantity shall be at least one hundred per cent of the highest approval plate air quantity plus seventy-five per cent of the next highest quantity plus fifty per cent of the approval plate quantity of each additional unit operating in that split. Air quantity measurements to determine compliance with this requirement shall be made at the most downwind unit of diesel-powered equipment that is being operated in that air split.

(e) The minimum quantities of air in any split where any diesel-powered equipment is operated shall be in accordance with the minimum air quantities required in subsections (a) and (b) and shall be specified in the mine diesel ventilation plan.

Section 205-A. Fuel Storage Facilities.—*(a) A mobile underground diesel fuel storage facility shall be any facility designed and constructed to provide for the temporary storage of diesel fuel transportation units or the dispensing of diesel fuel.*

(b) Diesel-powered equipment shall be used underground only with low volatile hydrocarbon fuel classified as ASTM D975 diesel fuel with a cetane index of at least 45, a maximum aromatic content of thirty-five per cent, a sulfur mass of less than five hundredths of one per cent and a flash point of one hundred degrees Fahrenheit or greater at standard temperature and pressure.

(c) Underground diesel fuel storage facilities shall meet the following general requirements:

(1) Fixed underground diesel fuel storage facilities are prohibited.

(2) No more than five hundred gallons of diesel fuel shall be stored in each mobile underground diesel fuel storage facility.

(d) Mobile underground diesel fuel storage facilities shall be located as follows:

(1) at least one hundred feet from shafts, slopes, shops and explosives magazines;

(2) at least twenty-five feet from trolley wires, haulage ways, power cables and electric equipment not necessary for the operation of the storage facilities; and

(3) in an area that is as dry as practicable.

(e) (1) *Mobile underground diesel fuel storage facilities shall meet the construction requirements and safety precautions enumerated in this subsection.*

(2) *Mobile underground diesel fuel storage facilities shall meet all of the following:*

(i) *Be constructed of noncombustible materials and provided with a means for automatic enclosure.*

(ii) *Be ventilated directly into the return air course using noncombustible materials.*

(iii) *Be equipped with an automatic fire suppression system complying with section 209-A.*

(iv) *Be equipped with at least two portable twenty-pound multipurpose dry-chemical type fire extinguishers.*

(v) *Be marked with conspicuous signs designating combustible liquid storage.*

(vi) *Be included in the pre-shift examination.*

(3) *Welding or cutting other than that performed in accordance with paragraph (4) shall not be done within fifty feet of a diesel fuel storage facility.*

(4) *When it is necessary to weld, cut or solder pipelines, cylinders, tanks or containers that may have contained diesel fuel, the following requirements shall apply:*

(i) *Cutting or welding shall not be performed on or within containers or tanks that have contained combustible or flammable materials until such containers or tanks have been thoroughly purged and cleaned or inerted and a vent or opening is provided to allow for sufficient release of any buildup pressure before heat is applied.*

(ii) *Diesel fuel shall not be allowed to enter pipelines or containers that have been welded, soldered, brazed or cut until the metal has cooled to ambient temperature.*

Section 206-A. Transfer of Diesel Fuel.—(a) Diesel fuel shall be transferred as provided in this section.

(b) *When diesel fuel is transferred by means of a pump and a hose equipped with a nozzle containing a self-closing valve, a powered pump may be used only if:*

(1) *the hose is equipped with a nozzle containing a self-closing valve without a latch-open device; and*

(2) *the pump is equipped with an accessible emergency shutoff switch.*

(c) *Diesel fuel shall not be transferred using compressed gas.*

(d) *Diesel fuel shall not be transferred to the fuel tank of diesel-powered equipment while the equipment's engine is running.*

(e) *Diesel fuel piping systems shall be designed and operated as dry systems.*

(f) *All piping, valves and fittings shall meet the following:*

(1) *Be capable of withstanding working pressures and stresses.*

- (2) *Be capable of withstanding four times the static pressures.*
- (3) *Be compatible with diesel fuel.*
- (4) *Be maintained in a manner that prevents leakage.*
- (g) *Vertical pipelines shall have manual shutoff valves installed at the surface filling point and at the underground discharge point.*
- (h) *Unburied diesel fuel pipelines shall not exceed three hundred feet in length and shall have shutoff valves located at each end of the unburied pipeline.*
- (i) *Horizontal pipelines shall not be used to distribute fuel throughout the mine.*
- (j) *Diesel fuel piping systems shall be used only to transport fuel from the surface directly to a single underground diesel fuel transfer point.*
- (k) *When boreholes are used, the diesel fuel piping system shall not be located in a borehole with electric power cables.*
- (l) *Diesel fuel pipelines located in any shaft shall be included as part of the required examination of the shaft.*
- (m) *Diesel fuel piping systems located in entries shall not be located on the same side of the entry as electric cables or power lines.*
- (n) *Diesel fuel pipelines shall not be located in any trolley-haulage entry, except that they may cross the entry perpendicular if buried or otherwise protected from damage and sealed.*
- (o) *Diesel fuel piping systems shall be protected to prevent physical damage.*

Section 207-A. Containers.—(a) Containers for the transport of diesel fuel shall meet the requirements of this section.

- (b) *Diesel fuel shall be transported only in containers specifically designed for the transport of diesel fuel.*
- (c) *No more than one safety can, conspicuously marked, shall be transported on a vehicle at any time.*
- (d) *Containers other than safety cans used to transport diesel fuel shall be provided with the following:*
 - (1) *Devices for venting.*
 - (2) *Self-closing caps.*
 - (3) *Vent pipes at least as large as the fill or withdrawal connection, whichever is larger, but not less than one and one-fourth inch nominal inside diameter.*
 - (4) *Liquid-tight connections for all container openings that are identified by conspicuous markings and closed when not in use.*
 - (5) *Shutoff valves located within one inch of the tank shell on each connection through which liquid can normally flow.*
- (e) *When tanks are provided with openings for manual gauging, liquid-tight caps or covers shall be provided and shall be kept closed when not open for gauging.*
- (f) *Containers used for the transport of diesel fuel shall not exceed a capacity of five hundred gallons.*

(g) Containers, other than safety cans, used for the transport of diesel fuel shall be permanently fixed to the transportation unit.

(h) Diesel fuel transportation units shall be transported individually and not with any other cars, except that two diesel fuel transportation units up to a maximum of five hundred gallons each may be transported together.

(i) Diesel fuel shall not be transported on conveyor belts.

(j) When transporting diesel fuel in containers other than safety cans, a fire extinguisher shall be provided on each end of the transportation unit. The fire extinguishers shall be multipurpose type dry-chemical fire extinguishers containing a nominal weight of twenty pounds.

(k) Diesel fuel transportation units shall have a fire suppression system that meets the requirements of section 208-A.

(l) In mines where trolley wire is used, diesel fuel transportation units shall be provided with insulating material to protect the units from energized trolley wire, and the distance between the diesel fuel transportation unit and the trolley wire shall not be less than twelve inches, or the trolley wire shall be de-energized when diesel fuel transportation units are transported through the area.

(m) Unattended diesel fuel transportation units shall be parked only in mobile underground diesel fuel storage facilities.

(n) Safety cans shall be used for emergency fueling only.

(o) Safety cans shall be clearly marked, have a maximum capacity of five gallons and be constructed of metal and equipped with a nozzle and self-closing valves.

Section 208-A. Fire Suppression for Equipment and Transportation.—(a) Fire suppression systems for diesel-powered equipment and fuel transportation units shall meet the requirements of this section.

(b) The system must be an automatic multipurpose dry-powder type fire suppression system suitable for the intended application and listed or approved by a nationally recognized independent testing laboratory. Installation requirements are as follows:

(1) The system shall be installed in accordance with the manufacturer's specifications and the limitations of the listing or approval.

(2) The system shall be installed in a protected location or guarded to minimize physical damage from routine operations.

(3) Suppressant agent distribution tubing or piping of the system shall be secured and protected against damage, including pinching, crimping, stretching, abrasion and corrosion.

(4) Discharge nozzles of the system shall be positioned and aimed for maximum fire suppression effectiveness in the protected areas. Nozzles shall also be protected against the entrance of foreign materials such as mud, coal dust or rock dust that could prevent proper discharge of suppressant agent.

(c) The fire suppression system shall provide automatic fire detection and suppression for all of the following:

(1) The engine, transmission, hydraulic pumps and tanks, fuel tanks, exposed brake units, air compressors and battery areas, as applicable, on all diesel-powered equipment.

(2) Fuel containers and electric panels or controls used during fuel transfer operations on fuel transportation units.

(d) The fire suppression system shall include a system fault and fire alarm annunciator that can be seen and heard by the equipment operator.

(e) The fire suppression system shall provide for automatic engine shutdown. Engine shutdown and discharge of suppressant agent may be delayed for a maximum of fifteen seconds after the fire alarm annunciator alerts the operator.

(f) At least two manual actuators shall be provided with at least one manual actuator at each end of the equipment. If the equipment is provided with an operator's compartment, one of the mechanical actuators shall be located in the compartment within easy reach of the operator. For stationary equipment, the two manual actuators shall be located with at least one actuator on the stationary equipment and at least one actuator a safe distance away from the equipment and in intake air.

Section 209-A. Fire Suppression for Storage Areas.—(a) Fire suppression systems for diesel fuel storage areas shall meet the requirements of this section.

(b) The system shall be an automatic multipurpose dry-powder type fire suppression system or other system of equal capability, suitable for the intended application and listed or approved by a nationally recognized independent testing laboratory. The system shall meet the following installation requirements:

(1) The system shall be installed in accordance with the manufacturer's specifications and the limitations of the listing or approval.

(2) The system shall be installed in a protected location or guarded to minimize physical damage from routine operations.

(3) Suppressant agent distribution tubing or piping of the system shall be secured and protected against damage, including pinching, crimping, stretching, abrasion and corrosion.

(4) Discharge nozzles of the system shall be positioned and aimed for maximum fire suppression effectiveness in the protected areas. Nozzles must also be protected against the entrance of foreign materials such as mud, coal dust and rock dust that could prevent proper discharge of suppressant agent.

(c) The fire suppressant system shall provide automatic fire detection and suppression for the fuel storage tanks, containers, safety cans, pumps, electrical panels and control equipment in fuel storage areas.

(d) Audible and visual alarms to warn of fire or system faults shall be provided at the protected area and at a surface location that is always

staffed when persons are underground. A means shall also be provided for warning all endangered persons in the event of fire.

(e) Fire suppression systems shall include two manual actuators with at least one located within the fuel storage facility and at least one located a safe distance away from the storage facility and in intake air.

(f) The fire suppression system shall remain operative in the event of electrical system failure.

(g) If electrically operated, the detection and actuation circuits shall be monitored and provided with status indicators showing power and circuit continuity. If not electrically operated, a means shall be provided to indicate the functional readiness status of the system.

(h) Fire suppression devices shall be visually inspected at least once each week by a person qualified to make such inspection.

(i) Each fire suppression device shall be tested and maintained.

(j) A record shall be maintained of the inspection required by this subsection. The record of the weekly inspections shall be maintained at an appropriate location for each fire suppression device.

(k) All miners normally assigned to the active workings of a mine shall be instructed about any hazards inherent to the operation of all fire suppression devices installed and, where appropriate, the safeguards available for each device.

Section 210-A. Use of Certain Starting Aids Prohibited.—The use of volatile or chemical starting aids is prohibited.

Section 211-A. Fueling.—(a) Fueling of diesel-powered equipment shall not be conducted in the intake escapeway unless the mine design and entry configuration make it necessary. In those cases where fueling in the intake escapeway is necessary, the mine operator shall submit a plan for approval to the department outlining the special safety precautions that will be taken to insure the protection of miners. Such plan shall specify a fixed location where fueling will be conducted in the intake escapeway and all other safety precautions that will be taken, which shall include an examination of the area for spillage or fire by a qualified person.

(b) Diesel fuel and other combustible materials shall be cleaned up and not be permitted to accumulate anywhere in an underground mine or on diesel-powered or electric equipment located therein.

(c) At least one person specially trained in the cleanup and disposal of diesel fuel spills shall be on duty at the mine when diesel-powered equipment or mobile fuel transportation equipment is being used or when any fueling of diesel-powered equipment is being conducted.

Section 212-A. Fire and Safety Training.—(a) All underground employes at the mine shall receive special instruction related to fighting fires involving diesel fuel. This training may be included in annual refresher training under MSHA regulations at 30 CFR Pt. 48 (relating to training and retraining of miners) or included in the fire drills required under MSHA regulations at 30 CFR § 75.1101-23 (relating to program of

instruction; location and use of fire fighting equipment; location of escapeways, exits and routes of travel; evacuation procedures; fire drills).

(b) All miners shall be trained in precautions for safe and healthful handling and disposal of diesel-powered equipment filters. All used intake air filters, exhaust diesel particulate matter filters and engine oil filters shall be placed in their original containers or other suitable enclosed containers and removed from the underground mine to the surface. Arrangements will be made for safe handling and disposal of these filters within a timely manner after they have reached the surface.

Section 213-A. Maintenance.—(a) Diesel-powered equipment shall be maintained in an approved and safe condition as described in this article or removed from service. Failure of the mine operator to comply with the maintenance requirements of this subsection may result in revocation of the department's approval of the complete diesel-powered equipment package, provided appropriate notification has been given to the mine operator and the procedures of this section have been taken. Upon receiving such notice, the mine operator shall have thirty days to submit a plan to achieve and maintain compliance. Such plan shall be evaluated by the department, and, upon approval, the mine operator shall implement the plan. The department shall monitor the mine operator's compliance. If the department then determines that the mine operator is unable or unwilling to comply, the department shall revoke the mine operator's approval.

(b) To acquire and maintain approval of a complete diesel-powered equipment package, the mine operator shall comply with the following requirements:

(1) All service, maintenance and repairs of approved complete diesel-powered equipment packages shall be performed by mechanics who are trained and qualified in accordance with section 222-A.

(2) Service and maintenance of approved complete diesel-powered equipment packages shall be performed according to:

- (i) the specified routine maintenance schedule;*
- (ii) on-board performance and maintenance diagnostics readings;*
- (iii) emissions test results; and*
- (iv) component manufacturer's recommendations.*

Section 214-A. Records.—(a) A record shall be made of all emissions tests, preoperational examinations and maintenance and repairs of complete diesel-powered equipment packages. The records made pursuant to this section shall meet the requirements of this section.

(b) The person performing the emissions test, examination, maintenance or repair shall certify by date, time, engine hour reading and signature that the emissions test, examination, maintenance or repair was made.

(c) Records of emissions tests and examinations shall include the specific results of such tests and examinations.

(d) *Records of maintenance and repairs shall include the work that was performed, any fluids or oil added, parts replaced or adjustments made and the results of any subsequently required emissions testing.*

(e) *Records of preoperational examinations shall be retained for the previous one hundred-hour maintenance cycle.*

(f) *Records of emissions tests, one hundred-hour maintenance tests and repairs shall be countersigned once each week by the certified mine electrician and mine foreman.*

(g) *All records, except as specified in subsection (e), required by this section shall be retained for at least one year at a surface location at the mine and made available for inspection by the department's district mine inspector and by miners and their representatives.*

Section 215-A. Duties of Operator.—(a) Prior to using a piece of diesel-powered equipment during a shift, the equipment operator shall conduct an examination as follows:

(1) *Check the exhaust emissions control and conditioning system components to determine that the components are in place and not damaged or leaking.*

(2) *Assure that the equipment is clean and free of accumulations of combustibles.*

(3) *Assure that the machine is loaded safely.*

(4) *Check for external physical damage.*

(5) *Check for loose or missing connections.*

(6) *Check engine oil level.*

(7) *Check transmission oil level.*

(8) *Check other fluid levels, if applicable.*

(8) *Check for hydraulic, coolant and oil leaks.*

(10) *Check fan, water pump and other belts.*

(11) *Check the fan for damage.*

(12) *Check guards.*

(13) *Check the fuel level.*

(14) *Check for fuel leaks.*

(15) *Comply with recordkeeping requirements pursuant to section 214-A.*

(b) *After the engine is started and warmed up, the equipment operator shall conduct an examination as follows:*

(1) *Check all on-board engine performance and maintenance diagnostics system gauges for proper operation and in-range readings. The equipment operator shall immediately shut down the engine and notify the operator if the on-board readings indicate any of the following:*

(i) *Intake restriction at full engine speed is greater than the manufacturer's recommendation.*

(ii) *Exhaust restriction at full engine speed is greater than the manufacturer's recommendation.*

(iii) *Coolant temperature is at or near two hundred twelve degrees Fahrenheit.*

(iv) *Low engine oil pressure.*

(v) *High engine oil temperature.*

(2) *Check safety features, including, but not limited to, the throttle, brakes, steering, lights and horn.*

(3) *Comply with recordkeeping requirements pursuant to section 214-A. Section 216-A. Scheduled Maintenance.—At intervals not exceeding one hundred hours of engine operation, a qualified mechanic shall perform the following maintenance and make all necessary adjustments or repairs or remove the equipment from service:*

(1) *Wash or steam-clean the equipment.*

(2) *Check for and remove any accumulations of coal, coal dust or other combustible materials.*

(3) *Check the equipment for damaged or missing components or other visible defects.*

(4) *Conduct electrical and safety component inspections.*

(5) *Replace engine oil and oil filter.*

(6) *Check the transmission oil level and add oil, if necessary.*

(7) *Check hydraulic oil level and add oil, if necessary.*

(8) *Check the engine coolant level and add coolant, if necessary.*

(9) *Check all other fluid levels and add fluid, if necessary.*

(10) *Check for oil, coolant and other fluid leaks.*

(11) *Inspect the cooling fan, radiator and shroud. Remove any obstructions and make necessary repairs.*

(12) *Check all belts. Tighten or replace, if necessary.*

(13) *Check the battery and service as necessary.*

(14) *Check the automatic fire suppression system.*

(15) *Check the portable fire extinguisher.*

(16) *Check the lights.*

(17) *Check the warning devices.*

(18) *With the engine operating, check and replace or repair the following:*

(i) *Oil pressure.*

(ii) *Intake air restriction at full engine speed.*

(iii) *Exhaust gas restriction at full engine speed.*

(iv) *Exhaust flame arrestor.*

(v) *All gauges and controls.*

(19) *Conduct repeatable loaded engine operating test in accordance with section 218-A.*

(20) *Evaluate and interpret the results of all of the above tests and examinations and make all necessary repairs or remove equipment from service.*

(21) *Comply with recordkeeping requirements pursuant to section 214-A.*

Section 217-A. Emissions Monitoring and Control.—(a) *Emissions for diesel-powered equipment shall be monitored and controlled as provided in this section.*

(b) *When any diesel-powered machine first enters service at a mine, baseline emission values shall be determined by a qualified mechanic. The qualified mechanic shall:*

(1) *Verify that the seal on the engine fuel injector is in place and that the proper fuel pump is on the equipment.*

(2) *Install a new clean intake air cleaner, measure and record the intake restriction pressure.*

(3) *Check the level of engine oil.*

(4) *Change the engine lubrication oil if not fresh.*

(5) *Check the level of the transmission fluid.*

(6) *Flush the exhaust system and install a new diesel particulate filter, measure and record the exhaust back pressure.*

(7) *Test the brakes.*

(8) *Place the equipment into an intake entry.*

(9) *Set the brakes and chock the wheels.*

(10) *Install the portable carbon monoxide (CO) sampling device into the untreated exhaust gas coupling provided in the operator's cab.*

(11) *Start the engine and allow it to warm up to operating temperature.*

(12) *For mobile equipment, shift into second gear and put the engine at full throttle, or for stationary equipment, induce a load and put the engine at full throttle.*

(13) *Start the CO sampler and measure and record CO levels every minute for five minutes.*

(14) *Comply with recordkeeping requirements pursuant to section 214-A.*

Section 218-A. Diagnostic Testing.—*At intervals not exceeding once every one hundred hours of engine operation, a qualified mechanic shall perform equipment maintenance diagnostic testing of each piece of diesel-powered equipment in the mine. The qualified mechanic shall:*

(1) *verify the identification numbers on the equipment;*

(2) *check the level of the engine lubricating oil;*

(3) *check the level of the transmission fluid;*

(4) *set the brakes and chock the wheels;*

(5) *install the portable CO sampling device into the untreated exhaust port coupling provided in the operator's cab;*

(6) *start the engine and allow it to warm up to operating temperature;*

(7) *check the intake restriction and the exhaust back pressure at high idle speed;*

(8) *if the intake restriction is more than the manufacturer's maximum recommended intake restriction, replace the intake filter with a clean one;*

(9) if the exhaust back pressure is more than the manufacturer's maximum recommended exhaust back pressure, replace the diesel particulate filter with a clean one and/or clean out the heat exchanger;

(10) for mobile equipment, shift into second gear and put the engine at full throttle, or for stationary equipment, induce a load and put engine at full throttle;

(11) start the CO sampler and record CO levels every minute for five minutes;

(12) install the portable CO sampling device into the treated exhaust port coupling provided in the operator's cab and repeat steps (10) and (11);

(13) if the average CO reading for untreated exhaust gas is greater than twice the baseline established under section 217-A(b) or if the average CO reading for treated exhaust gas is greater than 100 ppm, the equipment has failed and must be serviced and retested before it is returned to regular service; and

(14) comply with recordkeeping requirements pursuant to section 214-A.

Section 219-A. Exhaust Gas Monitoring and Control.—(a) In monitoring and controlling exhaust gases, the ambient concentration of exhaust gases in the mine atmosphere shall not exceed 35 ppm ceiling for carbon monoxide (CO), 25 ppm ceiling for nitric oxide (NO) and 3 ppm ceiling for nitrogen dioxide (NO₂). The concentration of these exhaust gases shall be measured at the equipment operator's or equipment attendant's position and in by the last piece of diesel-powered equipment operating in the same split of air. Measurements shall be made weekly or more often if necessary by a qualified person and shall be conducted pursuant to the requirements of this section.

(b) Measurement of exhaust gases shall be made with a sampling instrument no less precise than detector tubes.

(c) If the concentration of any of the gases listed in subsection (a) is seventy-five per cent or more of its exposure limit, changes to the use of the diesel equipment, the mine ventilation or other modifications to the mining process shall be made.

(d) If the concentration of any of the gases listed in subsection (a) exceeds the exposure limit, the diesel equipment operating in that split shall be removed from service immediately and corrective action taken. After corrective action has been taken by the mine operator, the diesel equipment may be returned to service in its regular operating mode for emissions testing purposes only, and emissions testing shall be conducted immediately to assure that the concentration does not exceed seventy-five per cent of the exposure limit. Corrective action must be taken until the concentration does not exceed seventy-five per cent of the exposure limit before the diesel equipment can be returned to full operation.

(e) In addition to the other maintenance requirements set forth in this article, the mine operator shall comply with the following requirements:

(1) *Repair or adjustment of the fuel injection system shall only be performed by qualified mechanics authorized by the engine manufacturer.*

(2) *Complete testing of the emissions system in accordance with section 218-A shall be conducted prior to any piece of diesel-powered equipment being put into service, after any repair or adjustment to the fuel delivery system, engine timing or exhaust emissions control and conditioning system.*

(3) *Service and maintenance of the intake air filter, exhaust particulate filter and the exhaust system shall be performed at specific time intervals based on the component manufacturer's recommendation, compliance with the engine or emissions control operation specifications and, as needed, based on the on-board diagnostics and/or emissions test results. Accurate records shall be maintained of all such service and maintenance.*

Section 220-A. Training and General Requirements.—(a) *All training course instructors and all training plans required by this section and sections 221-A and 222-A shall be approved by the department. Operator training and qualification shall meet the requirements of this section.*

(b) *Training shall be conducted in the basics of the operation of a diesel engine, Federal and State regulations governing their use, company rules for safe operation, specific features of each piece of equipment and the ability to recognize problems and shall be provided to each equipment operator and the mine health and safety committee if one exists. This training shall be designed to bring every operator to a level of good understanding of diesel equipment operation. Each operator will be qualified by attending a minimum eight-hour course, including classroom training on diesel fundamentals and equipment-specific hands-on training on the job.*

(c) *Upon successful completion of both training sessions, the operator shall be issued a Certificate of Qualification that qualifies him or her to operate a specific type of diesel-powered equipment. An operator may be qualified to operate more than one type of equipment by completing additional equipment-specific training covering differences specific to each additional type of equipment.*

(d) *Refresher training, separate from that required by MSHA regulations at 30 CFR Pt. 48 (relating to the training and retraining of miners), shall be required annually.*

(e) *The minimum eight-hour training required by subsection (b) shall include instruction in the following classroom subjects:*

(1) *Engine fundamentals, which shall include an introduction to the function of a diesel engine and recognition of all major components and their functions.*

(2) *Diesel regulations, which shall include an introduction to Federal and State regulations governing the use of diesel equipment.*

(3) *Diesel emissions, which shall include an introduction to diesel emissions and their adverse health effects.*

(4) *Factors that affect diesel emissions, which shall include a detailed presentation of engine faults and diesel fuel quality and their effect on emissions and the preventive actions that can be taken to minimize emissions levels.*

(5) *Emissions control devices, which shall include a detailed presentation of the different emissions control devices employed to reduce emissions and details about actions the operator must take to keep the devices in working order.*

(6) *Diagnostic techniques, which shall include a presentation of techniques that can be employed by the operator to assure the equipment is in safe operating condition and instruction about how to recognize and diagnose certain engine faults that may cause increases in emissions.*

(7) *The preoperational inspection, which shall include a presentation of the purpose, benefits and requirements of the preoperational inspection.*

(8) *Ventilation, which shall include an introduction to special ventilation requirements for areas where diesel-powered equipment will operate.*

(9) *Fire suppression system, which shall include an introduction to the fire suppression system and its function and when and how to activate the fire suppression manually.*

(10) *Operating rules, which shall include a detailed presentation of the driving rules, safe driving speeds, traffic control devices and equipment limitations.*

(11) *Emergency procedures, which shall include discussion of emergency situations, such as fire, diesel fuel spills, component failure, loss of ventilation air and emergency escape procedures and discussion of the potential use of the diesel-powered vehicle as an emergency escape vehicle in case of a mine emergency situation.*

(12) *Recordkeeping and reporting procedures, which shall include a presentation on required recordkeeping and reporting procedures for problems or unsafe conditions, high emissions level and preoperational inspections made by the equipment operator.*

(f) *A new Certificate of Qualification shall be issued annually after the equipment operator has received the annual refresher training.*

Section 221-A. Equipment-Specific Training.—*Equipment-specific hands-on orientation training shall be given in an area of the mine where the equipment will be operated. This orientation shall be specific to the type and make of the diesel machine and shall be presented in small groups. The following subjects shall be included in the training:*

(1) *Equipment layout, which shall include familiarization with the layout of the equipment, the operator's compartments and the controls.*

(2) *Preoperation inspection, which shall include familiarization with the preoperation inspection procedure and review of specific details of the inspection and location of the components to be inspected.*

(3) *Equipment limitations, which shall include instruction relating to equipment performance, speeds, capacities and blind areas.*

(4) *Operating areas, which shall include instruction relating to areas in which the equipment may be operated.*

(5) *Operation, which shall include familiarization with the controls, gauges and warning devices and safe operating limits of all indicating gauges.*

(6) *Refueling procedure, which shall include familiarization with fuel handling, permissible refueling areas, spill prevention, cleanup and potential hazards from diesel fuel.*

(7) *Emergency devices, which shall include instruction relating to the location and use of the fire extinguisher and fire suppression devices.*

(8) *Driving practice, which shall include supervised operation of the equipment.*

Section 222-A. Diesel Mechanic Training.—(a) Diesel mechanic training and qualification shall meet the requirements of this section.

(b) Diesel mechanics shall be trained and qualified to perform maintenance, repairs and testing of the features of diesel equipment certified by MSHA and the department.

(c) To be qualified, a diesel mechanic must successfully complete a minimum of sixteen hours of a training program approved by the department regarding the general function, operation, maintenance and testing of emissions control and conditioning components. The diesel mechanic must be qualified to perform these tasks on the specific machines used at the mine or mines where they are employed. Additional engine-specific training shall be provided to diesel mechanics in accordance with a plan approved by the department.

(d) Annual retraining programs for diesel mechanics shall be required and approved by the department. The annual retraining shall include refresher training as well as new procedure and new technology training as necessary. Such training shall be separate from refresher training pursuant to MSHA regulations at 30 CFR Pt. 48 (relating to training and retraining of miners) and electrical training required by MSHA.

(e) The minimum sixteen-hour diesel mechanic training programs shall be submitted for approval to the department and shall include training in the following minimum subject requirements:

(1) Federal and State requirements regulating the use of diesel equipment.

(2) Company policies and rules related to the use of diesel equipment.

(3) Emissions control system design and component technical training.

(4) On-board engine performance and maintenance diagnostics system design and component technical training.

(5) Service and maintenance procedures and requirements for the emissions control systems.

(6) *Emissions testing procedures and evaluation and interpretation of test results.*

(7) *Troubleshooting procedures for the emissions control systems.*

(8) *Fire protection systems test and maintenance.*

(9) *Fire and ignition sources and their control and elimination.*

(10) *Fuel system maintenance and safe fueling procedures.*

(11) *Intake air system design and components technical training and maintenance procedures.*

(12) *Engine shutdown device tests and maintenance.*

(13) *Special instructions regarding components, such as the fuel injection system, that shall only be repaired and adjusted by a qualified mechanic who has received special training and is authorized to make such repairs or adjustments by the component manufacturer.*

(14) *Instruction on recordkeeping requirements for maintenance procedures and emissions testing.*

(15) *Other subjects determined by the department to be necessary to address specific health and safety needs.*

Section 223-A. Operation of Diesel-Powered Equipment.—(a) In addition to other requirements of this article, diesel-powered equipment shall be operated pursuant to the standards set forth in this section.

(b) All diesel-powered equipment shall be attended while in operation with the engine running in underground mines.

(c) Unnecessary idling of diesel-powered equipment shall be prohibited.

(d) All roadways where diesel-powered equipment is operated shall be maintained as free as practicable from bottom irregularities, debris and wet or muddy conditions that will affect control of the equipment.

(e) Operating speeds shall be consistent with conditions of roadways, grades, clearances, visibility and traffic and type of equipment used.

(f) Equipment operators shall have full control of the mobile equipment while it is in motion.

(g) Traffic rules, including speed, signals and warning signs, shall be standardized at each mine and posted.

(h) All diesel-powered equipment shall be maintained in a safe and healthful operating condition. Equipment in an unsafe or unhealthful condition or not maintained in accordance with the engine or emissions control operating specifications shall be removed from service immediately and shall not be returned to service until all necessary corrective actions have been taken.

Section 224-A. Technical Advisory Committee on Diesel-Powered Equipment.—(a) There is hereby created a Technical Advisory Committee on Diesel-Powered Equipment for the purpose of advising the secretary regarding implementation of this article and evaluation of alternative technology or methods for meeting the requirements for diesel-powered equipment as set forth in this article. Any alternative technology or methods recommended by the advisory committee and/or approved by the secretary

shall not reduce or compromise the level of health and safety protection afforded by this article.

(b) The advisory committee shall consist of two members who shall be residents of this Commonwealth and appointed by the Governor. The Governor shall appoint one member to represent the viewpoint of the coal operators in this Commonwealth within thirty days from receipt of a list containing one or more nominees submitted by the major trade association representing coal operators in this Commonwealth and shall also appoint one member to represent the viewpoint of the working miners in this Commonwealth within thirty days from receipt of a list containing one or more nominees submitted by the highest ranking official within the major employee organization representing coal miners in this Commonwealth.

(c) Members of the advisory committee shall be appointed for a term of three years. If renominated and reappointed, a member may serve up to three successive three-year terms.

(d) Members of the advisory committee shall be compensated on a per diem basis of one hundred fifty dollars (\$150) per day plus all reasonable expenses incurred while performing their official duties.

(e) The advisory committee shall meet at least twice during each calendar year or more often as may be necessary.

(f) All actions of the advisory committee shall require the participation of both members which shall constitute a quorum.

(g) Upon application of a coal miner, coal mine operator, diesel-related technology manufacturer or on its own motion, the advisory committee shall consider requests for the use of alternative diesel-related health and safety technologies with general underground mining industry application that are consistent with this article. Approval of an application made under this subsection shall make the alternative technology or method available for use by any coal operator in this Commonwealth but shall not be construed to require that a coal mine operator use such approved alternative technology or method. Upon receipt of an application, the advisory committee shall conduct an investigation, which investigation shall include consultation with a representative or representatives of the major trade association representing coal operators in this Commonwealth and with a representative or representatives of the major employee organization representing coal miners in this Commonwealth.

(h) Upon application of a coal mine operator, the advisory committee shall consider site-specific requests for use of alternative diesel-related health and safety technologies. The committee's recommendations on applications submitted under this subsection shall be on a mine-by-mine basis. Upon receipt of a site-specific application, the advisory committee shall conduct an investigation, which investigation shall include consultation with the mine operator and the authorized representatives of the miners at the mine. Authorized representatives of the miners shall include a mine health and safety committee elected by miners at the mine,

a person or persons employed by an employee organization representing miners at the mine, or a person or persons authorized as the representative or representatives of miners of the mine in accordance with MSHA regulations at 30 CFR Pt. 40 (relating to representative of miners). Where there is no authorized representative of the miners, the advisory committee shall consult with a reasonable number of miners at the mine.

(i) (1) Within one hundred eighty days of receipt of an application for use of alternative technologies or methods, the advisory committee shall complete its investigation and make a recommendation to the secretary. The time period may be extended with the consent of the applicant.

(2) The advisory committee shall forward to the secretary three possible recommendations:

(i) a unanimous recommendation to approve the application for use of alternative technologies or methods;

(ii) a unanimous recommendation to reject the application for use of alternative technologies or methods; or

(iii) a divided recommendation where one member of the advisory committee recommends approval of the application for use of alternative technologies or methods and one member of the advisory committee recommends rejection of the application for use of alternative technologies or methods.

(3) In the event recommendations described in subparagraphs (i) and (ii) of paragraph (2) are forwarded to the secretary by the advisory committee, the secretary shall have thirty days in which to render a final decision adopting or rejecting the advisory committee's recommendation and the application. In the event of a divided recommendation as described in subparagraph (iii) of paragraph (2), the secretary shall convene, within thirty days, a meeting with the members of the advisory committee to discuss the reasons for the divided recommendation and to determine whether additional information and further discussion might result in a unanimous recommendation by the advisory committee. The secretary shall render a decision on the application within thirty days from the date of the meeting with the advisory committee.

(4) The advisory committee members shall only recommend approval of an application made under this section if, at the conclusion of the investigation, the committee members have made a determination that the use of the alternative technology or method shall not reduce or compromise the level of health and safety protection afforded by this article.

(5) Any advisory committee recommendation to the secretary for approval of an application made under this section for use of alternative technologies or methods shall be made in writing and shall include the results of its investigation and specific conditions of use for the alternative technology or method.

(6) An advisory committee decision to reject an application made under this section for use of alternative technologies or methods shall be made in

writing to the secretary and shall outline in detail the basis for the rejection.

(7) In the event of a divided vote as described in subparagraph (iii) of paragraph (2), each member of the committee shall submit a detailed report to the secretary within fourteen days of the committee's vote outlining the member's position for or against the application.

(j) Within thirty days of receipt of an advisory committee's unanimous recommendation to approve an application made under this section, the secretary shall approve or reject, without modification except as unanimously approved by the advisory committee, the advisory committee's recommendations, including all recommended conditions of use. Any alternative technologies or methods approved by the secretary shall not reduce or compromise the level of health and safety protection afforded by this article. The time period for the secretary's decision may be extended with the consent of the applicant.

(k) The secretary shall establish, based on recommendations made by the advisory committee, conditions of use for the use of diesel-powered equipment in shaft and slope construction operations at coal mines. All conditions of use proposed by the advisory committee shall be considered by the secretary and shall be adopted or rejected by the secretary without modification, except as approved by the advisory committee.

(l) In performing its functions, the advisory committee shall have access to the services of the department. The secretary shall make clerical support and assistance available to enable the advisory committee to carry out its duties. Upon the request of both members of the advisory committee, the secretary may draft proposed conditions of use and reports or perform investigations.

(m) Any action taken by the secretary to either approve or reject the use of an alternative technology or method under subsection (g), (h) or (j) shall be final and binding and not subject to further review except where a decision by the secretary may be deemed to be an abuse of discretion or contrary to law. If any party affected by a decision of the secretary believes that the decision is an abuse of discretion or contrary to law, that party may file a petition for review with the Commonwealth Court in accordance with Pa.R.A.P. Ch. 15 (relating to judicial review of governmental determinations). The court, in finding that any decision made by the secretary is an abuse of discretion or contrary to law, shall vacate and, if appropriate, remand the case.

(n) The powers and duties of the advisory committee shall be limited to the matters regarding the use of diesel-powered equipment in underground coal mines.

(o) Funding for the operation of the advisory committee and to implement the provisions of this article is to be derived from the general government appropriation of the department.

Section 8. Sections 334(b) and 401 heading of the act are amended to read:

Section 334. Technological Improvement.—* * *

(b) Upon receipt of this proposal, it shall be given preliminary review by the secretary. If such review indicates that the proposal has potential merit, the secretary may, at his discretion, appoint either a commission or a committee consisting of three representatives of the department, three operators' engineers, a representative of the mine employes, and any others he deems pertinent. Such commission or committee shall investigate and review said proposal to determine its effect on safety and property and report their findings in writing to the **[Secretary of Mines and Mineral Industries.] secretary.**

* * *

Section 401. Explosion or Accident; Investigation by Department **[of Mines and Mineral Industries]**; Inquests.—* * *

Section 9. All acts and parts of acts are repealed insofar as they are inconsistent with this act.

Section 10. This act shall take effect in 60 days.

APPROVED—The 19th day of December, A.D. 1996.

THOMAS J. RIDGE