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in the active workings shall be plotted on a mine map if it—

- (1) Is above the anchorage zone where roof bolts are used;
- (2) Impairs ventilation;
- (3) Impedes passage of persons;
- (4) Causes miners to be withdrawn from the area affected; or
- (5) Disrupts regular mining activities for more than one hour.

(c) The mine map on which roof falls are plotted shall be available at the mine site for inspection by authorized representatives of the Secretary and representatives of miners at the mine.

(d) The roof control plan for each mine shall be reviewed every six months by an authorized representative of the Secretary. This review shall take into consideration any falls of the roof, face and ribs and the adequacy of the support systems used at the time.

[53 FR 2375, Jan. 27, 1988; 60 FR 33723, June 29, 1995]

Subpart D—Ventilation

AUTHORITY: 30 U.S.C. 811, 863.

SOURCE: 61 FR 9829, Mar. 11, 1996, unless otherwise noted.

§ 75.300 Scope.

This subpart sets requirements for underground coal mine ventilation.

§ 75.301 Definitions.

In addition to the applicable definitions in § 75.2, the following definitions apply in this subpart.

Air course. An entry or a set of entries separated from other entries by stoppings, overcasts, other ventilation control devices, or by solid blocks of coal or rock so that any mixing of air currents between each is limited to leakage.

AMS operator. The person(s), designated by the mine operator, who is located on the surface of the mine and monitors the malfunction, alert, and alarm signals of the AMS and notifies appropriate personnel of these signals.

Appropriate personnel. The person or persons designated by the operator to perform specific tasks in response to AMS signals. Appropriate personnel include the responsible person(s) required

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by § 75.1501 when an emergency evacuation is necessary.

Atmospheric Monitoring System (AMS). A network consisting of hardware and software meeting the requirements of §§ 75.351 and 75.1103–2 and capable of: measuring atmospheric parameters; transmitting the measurements to a designated surface location; providing alert and alarm signals; processing and cataloging atmospheric data; and, providing reports. Early-warning fire detection systems using newer technology that provides equal or greater protection, as determined by the Secretary, will be considered atmospheric monitoring systems for the purposes of this subpart.

Belt air course. The entry in which a belt is located and any adjacent entry(ies) not separated from the belt entry by permanent ventilation controls, including any entries in series with the belt entry, terminating at a return regulator, a section loading point, or the surface.

Carbon monoxide ambient level. The average concentration in parts per million (ppm) of carbon monoxide detected in an air course containing carbon monoxide sensors. This average concentration is representative of the composition of the mine atmosphere over a period of mining activity during non-fire conditions. Separate ambient levels may be established for different areas of the mine.

Incombustible. Incapable of being burned.

Intake air. Air that has not yet ventilated the last working place on any split of any working section, or any worked-out area, whether pillared or nonpillared.

Intrinsically safe. Incapable of releasing enough electrical or thermal energy under normal or abnormal conditions to cause ignition of a flammable mixture of methane or natural gas and air of the most easily ignitable composition.

Noncombustible structure or area. Describes a structure or area that will continue to provide protection against flame spread for at least 1 hour when subjected to a fire test incorporating an ASTM E119–88 time/temperature heat input, or equivalent. The publication ASTM E119–88 “Standard Test

Methods for Fire Tests of Building Construction and Materials” is incorporated by reference and may be inspected at any MSHA Coal Mine Safety and Health District Office, or at MSHA’s Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies of the document can be purchased from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959; 610-832-9500; <http://www.astm.org>. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

Noncombustible material. Describes a material that, when used to construct a ventilation control, results in a control that will continue to serve its intended function for 1 hour when subjected to a fire test incorporating an ASTM E119-88 time/temperature heat input, or equivalent. The publication ASTM E119-88 “Standard Test Methods for Fire Tests of Building Construction and Materials” is incorporated by reference and may be inspected at any Coal Mine Safety and Health District Office, or at MSHA’s Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies of the document can be purchased from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959; 610-832-9500; <http://www.astm.org>. This incorporation by reference was approved by the Director of the Federal Register in

accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

Point feeding. The process of providing additional intake air to the belt air course from another intake air course through a regulator.

Return air. Air that has ventilated the last working place on any split of any working section or any worked-out area whether pillared or nonpillared. If air mixes with air that has ventilated the last working place on any split of any working section or any worked-out area, whether pillared or nonpillared, it is considered return air. For the purposes of § 75.507-1, air that has been used to ventilate any working place in a coal producing section or pillared area, or air that has been used to ventilate any working face if such air is directed away from the immediate return is return air. Notwithstanding the definition of intake air, for the purpose of ventilation of structures, areas or installations that are required by this subpart D to be ventilated to return air courses, and for ventilation of seals, other air courses may be designated as return air courses by the operator only when the air in these air courses will not be used to ventilate working places or other locations, structures, installations or areas required to be ventilated with intake air.

Worked-out area. An area where mining has been completed, whether pillared or nonpillared, excluding developing entries, return air courses, and intake air courses.

[61 FR 9829, Mar. 11, 1996; 61 FR 29288, June 10, 1996, as amended at 67 FR 38386, June 4, 2002; 69 FR 17526, Apr. 2, 2004; 71 FR 16668, Apr. 3, 2006; 80 FR 52990, Sept. 2, 2015]

§ 75.302 Main mine fans.

Each coal mine shall be ventilated by one or more main mine fans. Booster fans shall not be installed underground to assist main mine fans except in anthracite mines. In anthracite mines, booster fans installed in the main air current or a split of the main air current may be used provided their use is approved in the ventilation plan.

§ 75.310 Installation of main mine fans.

- (a) Each main mine fan shall be—
- (1) Installed on the surface in an incombustible housing;

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(2) Connected to the mine opening with incombustible air ducts;

(3) Equipped with an automatic device that gives a signal at the mine when the fan either slows or stops. A responsible person designated by the operator shall always be at a surface location at the mine where the signal can be seen or heard while anyone is underground. This person shall be provided with two-way communication with the working sections and work stations where persons are routinely assigned to work for the majority of a shift;

(4) Equipped with a pressure recording device or system. Mines permitted to shut down main mine fans under § 75.311 and which do not have a pressure recording device installed on main mine fans shall have until June 10, 1997 to install a pressure recording device or system on all main mine fans. If a device or system other than a circular pressure recorder is used to monitor main mine fan pressure, the monitoring device or system shall provide a continuous graph or continuous chart of the pressure as a function of time. At not more than 7-day intervals, a hard copy of the continuous graph or chart shall be generated or the record of the fan pressure shall be stored electronically. When records of fan pressure are stored electronically, the system used to store these records shall be secure and not susceptible to alteration and shall be capable of storing the required data. Records of the fan pressure shall be retained at a surface location at the mine for at least 1 year and be made available for inspection by authorized representatives of the Secretary and the representative of miners;

(5) Protected by one or more weak walls or explosion doors, or a combination of weak walls and explosion doors, located in direct line with possible explosive forces;

(6) Except as provided under paragraph (e) of this section, offset by at least 15 feet from the nearest side of the mine opening unless an alternative method of protecting the fan and its associated components is approved in the ventilation plan.

(b)(1) If an electric motor is used to drive a main mine fan, the motor shall

operate from a power circuit independent of all mine power circuits.

(2) If an internal combustion engine is used to drive a main mine fan—

(i) The fuel supply shall be protected against fires and explosions;

(ii) The engine shall be installed in an incombustible housing and be equipped with a remote shut-down device;

(iii) The engine and the engine exhaust system shall be located out of direct line of the air current exhausting from the mine; and

(iv) The engine exhaust shall be vented to the atmosphere so that the exhaust gases do not contaminate the mine intake air current or any enclosure.

(c) If a main mine fan monitoring system is used under § 75.312, the system shall—

(1) Record, as described in paragraph (a)(4) the mine ventilating pressure;

(2) Monitor bearing temperature, revolutions per minute, vibration, electric voltage, and amperage;

(3) Provide a printout of the monitored parameters, including the mine ventilating pressure within a reasonable period, not to exceed the end of the next scheduled shift during which miners are underground; and

(4) Be equipped with an automatic device that signals when—

(i) An electrical or mechanical deficiency exists in the monitoring system; or

(ii) A sudden increase or loss in mine ventilating pressure occurs.

(5) Provide monitoring, records, printouts, and signals required by paragraphs (c)(1) through (c)(4) at a surface location at the mine where a responsible person designated by the operator is always on duty and where signals from the monitoring system can be seen or heard while anyone is underground. This person shall be provided with two-way communication with the working sections and work stations where persons are routinely assigned to work for the majority of a shift.

(d) Weak walls and explosion doors shall have cross-sectional areas at least equal to that of the entry through which the pressure from an explosion underground would be relieved. A weak wall and explosion door combination

shall have a total cross-sectional area at least equal to that of the entry through which the pressure from an explosion underground would be relieved.

(e) If a mine fan is installed in line with an entry, a slope, or a shaft—

(1) The cross-sectional area of the pressure relief entry shall be at least equal to that of the fan entry;

(2) The fan entry shall be developed out of direct line with possible explosive forces;

(3) The coal or other solid material between the pressure relief entry and the fan entry shall be at least 2,500 square feet; and

(4) The surface opening of the pressure relief entry shall be not less than 15 feet nor more than 100 feet from the surface opening of the fan entry and from the underground intersection of the fan entry and pressure relief entry.

(f) In mines ventilated by multiple main mine fans, incombustible doors shall be installed so that if any main mine fan stops and air reversals through the fan are possible, the doors on the affected fan automatically close.

[61 FR 9829, Mar. 11, 1996, as amended at 61 FR 20877, May 8, 1996]

§75.311 Main mine fan operation.

(a) Main mine fans shall be continuously operated, except as otherwise approved in the ventilation plan, or when intentionally stopped for testing of automatic closing doors and automatic fan signal devices, maintenance or adjustment of the fan, or to perform maintenance or repair work underground that cannot otherwise be made while the fan is operating.

(b) Except as provided in paragraph (c) of this section, when a main mine fan is intentionally stopped and the ventilating quantity provided by the fan is not maintained by a back-up fan system—

(1) Only persons necessary to evaluate the effect of the fan stoppage or restart, or to perform maintenance or repair work that cannot otherwise be made while the fan is operating, shall be permitted underground;

(2) Mechanized equipment shall be shut off before stopping the fan; and

(3) Electric power circuits entering underground areas of the mine shall be deenergized.

(c) When a back-up fan system is used that does not provide the ventilating quantity provided by the main mine fan, persons may be permitted in the mine and electric power circuits may be energized as specified in the approved ventilation plan.

(d) If an unusual variance in the mine ventilation pressure is observed, or if an electrical or mechanical deficiency of a main mine fan is detected, the mine foreman or equivalent mine official, or in the absence of the mine foreman or equivalent mine official, a designated certified person acting for the mine foreman or equivalent mine official shall be notified immediately, and appropriate action or repairs shall be instituted promptly.

(e) While persons are underground, a responsible person designated by the operator shall always be at a surface location where each main mine fan signal can be seen or heard.

(f) The area within 100 feet of main mine fans and intake air openings shall be kept free of combustible material, unless alternative precautions necessary to provide protection from fire or other products of combustion are approved in the ventilation plan.

(g) If multiple mine fans are used, the mine ventilation system shall be designed and maintained to eliminate areas without air movement.

(h) Any atmospheric monitoring system operated during fan stoppages shall be intrinsically safe.

§75.312 Main mine fan examinations and records.

(a) To assure electrical and mechanical reliability of main mine fans, each main mine fan and its associated components, including devices for measuring or recording mine ventilation pressure, shall be examined for proper operation by a trained person designated by the operator. Examinations of main mine fans shall be made at least once each day that the fan operates, unless a fan monitoring system is used. No examination is required on

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any day when no one, including certified persons, goes underground, except that an examination shall be completed prior to anyone entering the mine.

(b)(1) If a main mine fan monitoring system is used, a trained person designated by the operator shall—

(i) At least once each day review the data provided by the fan monitoring system to assure that the fan and the fan monitoring system are operating properly. No review is required on any day when no one, including certified persons, goes underground, except that a review of the data shall be performed prior to anyone entering the underground portion of the mine. Data reviewed should include the fan pressure, bearing temperature, revolutions per minute, vibration, electric voltage, and amperage; and

(ii) At least every 7 days—

(A) Test the monitoring system for proper operation; and

(B) Examine each main mine fan and its associated components to assure electrical and mechanical reliability of main mine fans.

(2) If the monitoring system malfunctions, the malfunction shall be corrected, or paragraph (a) of this section shall apply.

(c) At least every 31 days, the automatic fan signal device for each main mine fan shall be tested by stopping the fan. Only persons necessary to evaluate the effect of the fan stoppage or restart, or to perform maintenance or repair work that cannot otherwise be made while the fan is operating, shall be permitted underground. Notwithstanding the requirement of §75.311(b)(3), underground power may remain energized during this test provided no one, including persons identified in §75.311(b)(1), is underground. If the fan is not restarted within 15 minutes, underground power shall be deenergized and no one shall enter any underground area of the mine until the fan is restarted and an examination of the mine is conducted as described in §75.360 (b) through (e) and the mine has been determined to be safe.

(d) At least every 31 days, the automatic closing doors in multiple main mine fan systems shall be tested by stopping the fan. Only persons nec-

essary to evaluate the effect of the fan stoppage or restart, or to perform maintenance or repair work that cannot otherwise be made while the fan is operating, shall be permitted underground. Notwithstanding the provisions of §75.311, underground power may remain energized during this test provided no one, including persons identified in §75.311(b)(1), is underground. If the fan is not restarted within 15 minutes, underground power shall be deenergized and no one shall enter any underground area of the mine, until the fan is restarted and an examination of the mine is conducted as described in §75.360 (b) through (e) and the mine has been determined to be safe.

(e) Circular main mine fan pressure recording charts shall be changed before the beginning of a second revolution.

(f)(1) *Certification.* Persons making main mine fan examinations shall certify by initials and date at the fan or another location specified by the operator that the examinations were made. Each certification shall identify the main mine fan examined.

(2) Persons reviewing data produced by a main mine fan monitoring system shall certify by initials and date on a printed copy of the data from the system that the review was completed. In lieu of certification on a copy of the data, the person reviewing the data may certify electronically that the review was completed. Electronic certification shall be by handwritten initials and date in a computer system so as to be secure and not susceptible to alteration.

(g)(1) *Recordkeeping.* By the end of the shift on which the examination is made, persons making main mine fan examinations shall record all uncorrected defects that may affect the operation of the fan that are not corrected by the end of that shift. Records shall be maintained in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(2) When a fan monitoring system is used in lieu of the daily fan examination—

(i) The certified copies of data produced by fan monitoring systems shall be maintained separate from other computer-generated reports or data; and

(ii) A record shall be made of any fan monitoring system malfunctions, electrical or mechanical deficiencies in the monitoring system and any sudden increase or loss in mine ventilating pressure. The record shall be made by the end of the shift on which the review of the data is completed and shall be maintained in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(3) By the end of the shift on which the monthly test of the automatic fan signal device or the automatic closing doors is completed, persons making these tests shall record the results of the tests. Records shall be maintained in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(h) *Retention period.* Records, including records of mine fan pressure and the certified copies of data produced by fan monitoring systems, shall be retained at a surface location at the mine for at least 1 year and shall be made available for inspection by authorized representatives of the Secretary and the representative of miners.

§75.313 Main mine fan stoppage with persons underground.

(a) If a main mine fan stops while anyone is underground and the ventilating quantity provided by the fan is not maintained by a back-up fan system—

(1) Electrically powered equipment in each working section shall be deenergized;

(2) Other mechanized equipment in each working section shall be shut off; and

(3) Everyone shall be withdrawn from the working sections and areas where mechanized mining equipment is being installed or removed.

(b) If ventilation is restored within 15 minutes after a main mine fan stops, certified persons shall examine for

methane in the working places and in other areas where methane is likely to accumulate before work is resumed and before equipment is energized or restarted in these areas.

(c) If ventilation is not restored within 15 minutes after a main mine fan stops—

(1) Everyone shall be withdrawn from the mine;

(2) Underground electric power circuits shall be deenergized. However, circuits necessary to withdraw persons from the mine need not be deenergized if located in areas or haulageways where methane is not likely to migrate to or accumulate. These circuits shall be deenergized as persons are withdrawn; and

(3) Mechanized equipment not located on working sections shall be shut off. However, mechanized equipment necessary to withdraw persons from the mine need not be shut off if located in areas where methane is not likely to migrate to or accumulate.

(d)(1) When ventilation is restored—

(i) No one other than designated certified examiners shall enter any underground area of the mine until an examination is conducted as described in §75.360(b) through (e) and the area has been determined to be safe. Designated certified examiners shall enter the underground area of the mine from which miners have been withdrawn only after the fan has operated for at least 15 minutes unless a longer period of time is specified in the approved ventilation plan.

(ii) Underground power circuits shall not be energized and nonpermissible mechanized equipment shall not be started or operated in an area until an examination is conducted as described in §75.360(b) through (e) and the area has been determined to be safe, except that designated certified examiners may use nonpermissible transportation equipment in intake airways to facilitate the making of the required examination.

(2) If ventilation is restored to the mine before miners reach the surface, the miners may return to underground working areas only after an examination of the areas is made by a certified person and the areas are determined to be safe.

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(e) Any atmospheric monitoring system operated during fan stoppages shall be intrinsically safe.

(f) Any electrical refuge alternative components exposed to the mine atmosphere shall be approved as intrinsically safe for use during fan stoppages. Any electrical refuge alternative components located inside the refuge alternative shall be either approved as intrinsically safe or approved as permissible for use during fan stoppages.

[61 FR 9829, Mar. 11, 1996, as amended at 73 FR 80697, Dec. 31, 2008]

§ 75.320 Air quality detectors and measurement devices.

(a) Tests for methane shall be made by a qualified person with MSHA approved detectors that are maintained in permissible and proper operating condition and calibrated with a known methane-air mixture at least once every 31 days.

(b) Tests for oxygen deficiency shall be made by a qualified person with MSHA approved oxygen detectors that are maintained in permissible and proper operating condition and that can detect 19.5 percent oxygen with an accuracy of ± 0.5 percent. The oxygen detectors shall be calibrated at the start of each shift that the detectors will be used.

(c) Handheld devices that contain electrical components and that are used for measuring air velocity, carbon monoxide, oxides of nitrogen, and other gases shall be approved and maintained in permissible and proper operating condition.

(d) An oxygen detector approved by MSHA shall be used to make tests for oxygen deficiency required by the regulations in this part. Permissible flame safety lamps may only be used as a supplementary testing device.

(e) Maintenance of instruments required by paragraphs (a) through (d) of this section shall be done by persons trained in such maintenance.

§ 75.321 Air quality.

(a)(1) The air in areas where persons work or travel, except as specified in paragraph (a)(2) of this section, shall contain at least 19.5 percent oxygen and not more than 0.5 percent carbon dioxide, and the volume and velocity of

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the air current in these areas shall be sufficient to dilute, render harmless, and carry away flammable, explosive, noxious, and harmful gases, dusts, smoke, and fumes.

(2) The air in areas of bleeder entries and worked-out areas where persons work or travel shall contain at least 19.5 percent oxygen, and carbon dioxide levels shall not exceed 0.5 percent time weighted average and 3.0 percent short term exposure limit.

(b) Notwithstanding the provisions of § 75.322, for the purpose of preventing explosions from gases other than methane, the following gases shall not be permitted to accumulate in excess of the concentrations listed below:

- (1) Carbon monoxide (CO)—2.5 percent
- (2) Hydrogen (H₂)—80 percent
- (3) Hydrogen sulfide (H₂ S)—80 percent
- (4) Acetylene (C₂ H₂)—40 percent
- (5) Propane (C₃ H₈)—40 percent
- (6) MAPP (methyl-acetylene-propylene-propodiene)—30 percent

§ 75.322 Harmful quantities of noxious gases.

Concentrations of noxious or poisonous gases, other than carbon dioxide, shall not exceed the threshold limit values (TLV) as specified and applied by the American Conference of Governmental Industrial Hygienists in "Threshold Limit Values for Substance in Workroom Air" (1972). Detectors or laboratory analysis of mine air samples shall be used to determine the concentrations of harmful, noxious, or poisonous gases. This incorporation by reference has been approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies are available from MSHA's Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; and at every MSHA Coal Mine Safety and Health District Office. The material is available for examination at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/

code_of_federal_regulations/ibr_locations.html.

[80 FR 52991, Sept. 2, 2015]

§ 75.323 Actions for excessive methane.

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

(b) *Working places and intake air courses.* (1) When 1.0 percent or more methane is present in a working place or an intake air course, including an air course in which a belt conveyor is located, or in an area where mechanized mining equipment is being installed or removed—

(i) Except intrinsically safe atmospheric monitoring systems (AMS), electrically powered equipment in the affected area shall be deenergized, and other mechanized equipment shall be shut off;

(ii) Changes or adjustments shall be made at once to the ventilation system to reduce the concentration of methane to less than 1.0 percent; and

(iii) No other work shall be permitted in the affected area until the methane concentration is less than 1.0 percent.

(2) When 1.5 percent or more methane is present in a working place or an intake air course, including an air course in which a belt conveyor is located, or in an area where mechanized mining equipment is being installed or removed—

(i) Everyone except those persons referred to in §104(c) of the Act shall be withdrawn from the affected area; and

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

(c) *Return air split.* (1) When 1.0 percent or more methane is present in a return air split between the last working place on a working section and where that split of air meets another split of air, or the location at which the split is used to ventilate seals or worked-out areas changes or adjustments shall be made at once to the ventilation system to reduce the concentration of methane in the return air to less than 1.0 percent.

(2) When 1.5 percent or more methane is present in a return air split between the last working place on a working

section and where that split of air meets another split of air, or the location where the split is used to ventilate seals or worked-out areas—

(i) Everyone except those persons referred to in §104(c) of the Act shall be withdrawn from the affected area;

(ii) Other than intrinsically safe AMS, equipment in the affected area shall be deenergized, electric power shall be disconnected at the power source, and other mechanized equipment shall be shut off; and

(iii) No other work shall be permitted in the affected area until the methane concentration in the return air is less than 1.0 percent.

(d) *Return air split alternative.* (1) The provisions of this paragraph apply if—

(i) The quantity of air in the split ventilating the active workings is at least 27,000 cubic feet per minute in the last open crosscut or the quantity specified in the approved ventilation plan, whichever is greater;

(ii) The methane content of the air in the split is continuously monitored during mining operations by an AMS that gives a visual and audible signal on the working section when the methane in the return air reaches 1.5 percent, and the methane content is monitored as specified in §75.351; and

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

(2) When 1.5 percent or more methane is present in a return air split between a point in the return opposite the section loading point and where that split of air meets another split of air or where the split of air is used to ventilate seals or worked-out areas—

(i) Changes or adjustments shall be made at once to the ventilation system to reduce the concentration of methane in the return air below 1.5 percent;

(ii) Everyone except those persons referred to in §104(c) of the Act shall be withdrawn from the affected area;

(iii) Except for intrinsically safe AMS, equipment in the affected area shall be deenergized, electric power shall be disconnected at the power source, and other mechanized equipment shall be shut off; and

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(iv) No other work shall be permitted in the affected area until the methane concentration in the return air is less than 1.5 percent.

(e) *Bleeders and other return air courses.* The concentration of methane in a bleeder split of air immediately before the air in the split joins another split of air, or in a return air course other than as described in paragraphs (c) and (d) of this section, shall not exceed 2.0 percent.

§ 75.324 Intentional changes in the ventilation system.

(a) A person designated by the operator shall supervise any intentional change in ventilation that—

(1) Alters the main air current or any split of the main air current in a manner that could materially affect the safety or health of persons in the mine; or

(2) Affects section ventilation by 9,000 cubic feet per minute of air or more in bituminous or lignite mines, or 5,000 cubic feet per minute of air or more in anthracite mines.

(b) Intentional changes shall be made only under the following conditions:

(1) Electric power shall be removed from areas affected by the ventilation change and mechanized equipment in those areas shall be shut off before the ventilation change begins.

(2) Only persons making the change in ventilation shall be in the mine.

(3) Electric power shall not be restored to the areas affected by the ventilation change and mechanized equipment shall not be restarted until a certified person has examined these areas for methane accumulation and for oxygen deficiency and has determined that the areas are safe.

§ 75.325 Air quantity.

(a)(1) In bituminous and lignite mines the quantity of air shall be at least 3,000 cubic feet per minute reaching each working face where coal is being cut, mined, drilled for blasting, or loaded. When a greater quantity is necessary to dilute, render harmless, and carry away flammable, explosive, noxious, and harmful gases, dusts, smoke, and fumes, this quantity shall be specified in the approved ventilation plan. A minimum air quantity may be

required to be specified in the approved ventilation plan for other working places or working faces.

(2) The quantity of air reaching the working face shall be determined at or near the face end of the line curtain, ventilation tubing, or other ventilation control device. If the curtain, tubing, or device extends beyond the last row of permanent roof supports, the quantity of air reaching the working face shall be determined behind the line curtain or in the ventilation tubing at or near the last row of permanent supports. When machine-mounted dust collectors are used in conjunction with blowing face ventilation systems, the quantity of air reaching the working face shall be determined with the dust collector turned off.

(3) If machine mounted dust collectors or diffuser fans are used, the approved ventilation plan shall specify the operating volume of the dust collector or diffuser fan.

(b) In bituminous and lignite mines, the quantity of air reaching the last open crosscut of each set of entries or rooms on each working section and the quantity of air reaching the intake end of a pillar line shall be at least 9,000 cubic feet per minute unless a greater quantity is required to be specified in the approved ventilation plan. This minimum also applies to sections which are not operating but are capable of producing coal by simply energizing the equipment on the section.

(c) In longwall and shortwall mining systems—

(1) The quantity of air shall be at least 30,000 cubic feet per minute reaching the working face of each longwall, unless the operator demonstrates that a lesser air quantity will maintain continual compliance with applicable methane and respirable dust standards. This lesser quantity shall be specified in the approved ventilation plan. A quantity greater than 30,000 cubic feet per minute may be required to be specified in the approved ventilation plan.

(2) The velocity of air that will be provided to control methane and respirable dust in accordance with applicable standards on each longwall or shortwall and the locations where these velocities will be provided shall be specified in the approved ventilation

plan. The locations specified shall be at least 50 feet but no more than 100 feet from the headgate and tailgate, respectively.

(d) Ventilation shall be maintained during installation and removal of mechanized mining equipment. The approved ventilation plan shall specify the minimum quantity of air, the locations where this quantity will be provided and the ventilation controls required.

(e) In anthracite mines, the quantity of air shall be as follows:

(1) At least 1,500 cubic feet per minute reaching each working face where coal is being mined, unless a greater quantity is required to be specified in the approved ventilation plan.

(2) At least 5,000 cubic feet per minute passing through the last open crosscut in each set of entries or rooms and at the intake end of any pillar line, unless a greater quantity is required to be specified in the approved ventilation plan.

(3) When robbing areas where air currents cannot be controlled and air measurements cannot be obtained, the air shall have perceptible movement.

(f) The minimum ventilating air quantity for an individual unit of diesel-powered equipment being operated shall be at least that specified on the approval plate for that equipment. Such air quantity shall be maintained—

(1) In any working place where the equipment is being operated;

(2) At the section loading point during any shift the equipment is being operated on the working section;

(3) In any entry where the equipment is being operated outby the section loading point in areas of the mine developed on or after April 25, 1997;

(4) In any air course with single or multiple entries where the equipment is being operated outby the section loading point in areas of the mine developed prior to April 25, 1997; and

(5) At any other location required by the district manager and specified in the approved ventilation plan.

(g) The minimum ventilating air quantity where multiple units of diesel-powered equipment are operated on working sections and in areas where mechanized mining equipment is being

installed or removed must be at least the sum of that specified on the approval plates of all the diesel-powered equipment on the working section or in the area where mechanized mining equipment is being installed or removed. The minimum ventilating air quantity shall be specified in the approved ventilation plan. For working sections such air quantity must be maintained—

(1) In the last open crosscut of each set of entries or rooms in each working section;

(2) In the intake, reaching the working face of each longwall; and

(3) At the intake end of any pillar line.

(h) The following equipment may be excluded from the calculations of ventilating air quantity under paragraph (g) if such equipment exclusion is approved by the district manager and specified in the ventilation plan:

(1) Self-propelled equipment meeting the requirements of § 75.1908(b);

(2) Equipment that discharges its exhaust into intake air that is coursed directly to a return air course;

(3) Equipment that discharges its exhaust directly into a return air course; and

(4) Other equipment having duty cycles such that the emissions would not significantly affect the exposure of miners.

(i) A ventilating air quantity that is less than what is required by paragraph (g) of this section may be approved by the district manager in the ventilation plan based upon the results of sampling that demonstrate that the lesser air quantity will maintain continuous compliance with applicable TLV[®]'s.

(j) If during sampling required by § 70.1900(c) of this subchapter the ventilating air is found to contain concentrations of CO or NO₂ in excess of the action level specified by § 70.1900(c), higher action levels may be approved by the district manager based on the results of sampling that demonstrate that a higher action level will maintain continuous compliance with applicable TLV[®]'s. Action levels other than those specified in § 70.1900(c) shall be specified in the approved ventilation plan.

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(k) As of November 25, 1997 the ventilating air quantity required where diesel-powered equipment is operated shall meet the requirements of paragraphs (f) through (j) of this section. Mine operators utilizing diesel-powered equipment in underground coal mines shall submit to the appropriate MSHA district manager a revised ventilation plan or appropriate amendments to the existing plan, in accordance with § 75.371, which implement the requirements of paragraphs (f) through (j) of this section.

[61 FR 9828, Mar. 11, 1996; 61 FR 26442, May 28, 1996; 61 FR 29288, June 10, 1996, as amended at 61 FR 55526, Oct. 25, 1996; 62 FR 34641, June 27, 1997; 79 FR 24987, May 1, 2014]

§ 75.326 Mean entry air velocity.

In exhausting face ventilation systems, the mean entry air velocity shall be at least 60 feet per minute reaching each working face where coal is being cut, mined, drilled for blasting, or loaded, and to any other working places as required in the approved ventilation plan. A lower mean entry air velocity may be approved in the ventilation plan if the lower velocity will maintain methane and respirable dust concentrations in accordance with the applicable levels. Mean entry air velocity shall be determined at or near the inby end of the line curtain, ventilation tubing, or other face ventilation control devices.

[61 FR 9828, Mar. 11, 1996; 61 FR 29288, June 10, 1996]

§ 75.327 Air courses and trolley haulage systems.

(a) In any mine opened on or after March 30, 1970, or in any new working section of a mine opened before that date, where trolley haulage systems are maintained and where trolley wires or trolley feeder wires are installed, an authorized representative of the Secretary shall require enough entries or rooms as intake air courses to limit the velocity of air currents in the haulageways to minimize the hazards of fires and dust explosions in the haulageways.

(b) Unless the district manager approves a higher velocity, the velocity of the air current in the trolley haulage entries shall be limited to not more than 250 feet per minute. A higher air

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velocity may be required to limit the methane content in these haulage entries or elsewhere in the mine to less than 1.0 percent and provide an adequate supply of oxygen.

§ 75.330 Face ventilation control devices.

(a) Brattice cloth, ventilation tubing and other face ventilation control devices shall be made of flame-resistant material approved by MSHA.

(b)(1) Ventilation control devices shall be used to provide ventilation to dilute, render harmless, and to carry away flammable, explosive, noxious, and harmful gases, dusts, smoke, and fumes—

(i) To each working face from which coal is being cut, mined, drilled for blasting, or loaded; and

(ii) To any other working places as required by the approved ventilation plan.

(2) These devices shall be installed at a distance no greater than 10 feet from the area of deepest penetration to which any portion of the face has been advanced unless an alternative distance is specified and approved in the ventilation plan. Alternative distances specified shall be capable of maintaining concentrations of respirable dust, methane, and other harmful gases, in accordance with the levels specified in the applicable sections of this chapter.

(c) When the line brattice or any other face ventilation control device is damaged to an extent that ventilation of the working face is inadequate, production activities in the working place shall cease until necessary repairs are made and adequate ventilation is restored.

[61 FR 9828, Mar. 11, 1996; 61 FR 29288, June 10, 1996]

§ 75.331 Auxiliary fans and tubing.

(a) When auxiliary fans and tubing are used for face ventilation, each auxiliary fan shall be—

(1) Permissible, if the fan is electrically operated;

(2) Maintained in proper operating condition;

(3) Deenergized or shut off when no one is present on the working section; and

(4) Located and operated to avoid recirculation of air.

(b) If a deficiency exists in any auxiliary fan system, the deficiency shall be corrected or the auxiliary fan shall be deenergized immediately.

(c) If the air passing through an auxiliary fan or tubing contains 1.0 percent or more methane, power to electrical equipment in the working place and to the auxiliary fan shall be deenergized, and other mechanized equipment in the working place shall be shut off until the methane concentration is reduced to less than 1.0 percent.

(d) When an auxiliary fan is stopped—

(1) Line brattice or other face ventilation control devices shall be used to maintain ventilation to affected faces; and

(2) Electrical equipment in the affected working places shall be disconnected at the power source, and other mechanized equipment shall be shut off until ventilation to the working place is restored.

§ 75.332 Working sections and working places.

(a)(1) Each working section and each area where mechanized mining equipment is being installed or removed, shall be ventilated by a separate split of intake air directed by overcasts, undercasts or other permanent ventilation controls.

(2) When two or more sets of mining equipment are simultaneously engaged in cutting, mining, or loading coal or rock from working places within the same working section, each set of mining equipment shall be on a separate split of intake air.

(3) For purposes of this section, a set of mining equipment includes a single loading machine, a single continuous mining machine, or a single longwall or shortwall mining machine.

(b)(1) Air that has passed through any area that is not examined under §§ 75.360, 75.361 or 75.364 of this subpart, or through an area where second mining has been done shall not be used to ventilate any working place. Second mining is intentional retreat mining where pillars have been wholly or partially removed, regardless of the amount of recovery obtained.

(2) Air that has passed by any opening of any unsealed area that is not examined under §§ 75.360, 75.361 or 75.364 of this subpart, shall not be used to ventilate any working place.

§ 75.333 Ventilation controls.

(a) For purposes of this section, “doors” include any door frames.

(b) Permanent stoppings or other permanent ventilation control devices constructed after November 15, 1992, shall be built and maintained—

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

(2) To separate belt conveyor haulageways from return air courses, except where belt entries in areas of mines developed before March 30, 1970, are used as return air courses;

(3) To separate belt conveyor haulageways from intake air courses when the air in the intake air courses is used to provide air to active working places. Temporary ventilation controls may be used in rooms that are 600 feet or less from the centerline of the entry from which the rooms were developed including where continuous face haulage systems are used in such rooms. When continuous face haulage systems are used, permanent stoppings or other permanent ventilation control devices shall be built and maintained to the outby most point of travel of the dolly or 600 feet from the point of deepest penetration in the conveyor belt entry, whichever distance is closer to the point of deepest penetration, to separate the continuous haulage entry from the intake entries;

(4) To separate the primary escapeway from belt and trolley haulage entries, as required by § 75.380(g). For the purposes of § 75.380(g), the loading point for a continuous haulage system shall be the outby most point of travel of the dolly or 600 feet from the

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point of deepest penetration, whichever distance is less; and

(5) In return air courses to direct air into adjacent worked-out areas.

(c) Personnel doors shall be constructed of noncombustible material and shall be of sufficient strength to serve their intended purpose of maintaining separation and permitting travel between air courses, and shall be installed as follows in permanent stoppings constructed after November 15, 1992:

(1) The distance between personnel doors shall be no more than 300 feet in seam heights below 48 inches and 600 feet in seam heights 48 inches or higher.

(2) The location of all personnel doors in stoppings along escapeways shall be clearly marked so that the doors may be easily identified by anyone traveling in the escapeway and in the entries on either side of the doors.

(3) When not in use, personnel doors shall be closed.

(4) An airlock shall be established where the air pressure differential between air courses creates a static force exceeding 125 pounds on closed personnel doors along escapeways.

(d) Doors, other than personnel doors, constructed after November 15, 1992, that are used in lieu of permanent stoppings or to control ventilation within an air course shall be:

(1) Made of noncombustible material or coated on all accessible surfaces with flame-retardant materials having a flame-spread index of 25 or less, as tested under ASTM E162-87, "Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source." This publication is incorporated by reference and may be inspected at any MSHA Coal Mine Safety and Health District Office, or at MSHA's Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies of the document can be purchased from

the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959; 610-832-9500; <http://www.astm.org>. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) Of sufficient strength to serve their intended purpose of maintaining separation and permitting travel between or within air courses or entries.

(3) Installed in pairs to form an airlock. When an airlock is used, one side of the airlock shall remain closed. When not in use, both sides shall be closed.

(e)(1)(i) Except as provided in paragraphs (e)(2), (3), and (4) of this section, all overcasts, undercasts, shaft partitions, permanent stoppings, and regulators, installed after June 10, 1996, shall be constructed in a traditionally accepted method and of materials that have been demonstrated to perform adequately or in a method and of materials that have been tested and shown to have a minimum strength equal to or greater than the traditionally accepted in-mine controls. Tests may be performed under ASTM E72-80, "Standard Methods of Conducting Strength Tests of Panels for Building Construction" (Section 12-Transverse Load-Specimen Vertical, load, only), or the operator may conduct comparative in-mine tests. In-mine tests shall be designed to demonstrate the comparative strength of the proposed construction and a traditionally accepted in-mine control. The publication ASTM E72-80, "Standard Methods of Conducting Strength Tests of Panels for Building Construction," is incorporated by reference and may be inspected at any MSHA Coal Mine Safety and Health District Office, or at MSHA's Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies

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(ii) All overcasts, undercasts, shaft partitions, permanent stoppings, and regulators, installed after November 15, 1992, shall be constructed of non-combustible material. Materials that are suitable for the construction of overcasts, undercasts, shaft partitions, permanent stoppings, and regulators include concrete, concrete block, brick, cinder block, tile, or steel. No ventilation controls installed after November 15, 1992, shall be constructed of aluminum.

(2) In anthracite mines, permanent stoppings may be constructed of overlapping layers of hardwood mine boards, if the stoppings are a minimum 2 inches thick.

(3) When timbers are used to create permanent stoppings in heaving or caving areas, the stoppings shall be coated on all accessible surfaces with a flame-retardant material having a flame-spread index of 25 or less, as tested under ASTM E162-87, "Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source." This publication is incorporated by reference and may be inspected at any MSHA Coal Mine Safety and Health District Office, or at MSHA's Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies of the document can be purchased from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959; 610-832-9500; <http://www.astm.org>. This incorpo-

ration by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(4) In anthracite mines, doors and regulators may be constructed of overlapping layers of hardwood boards, if the doors, door frames, and regulators are a minimum 2 inches thick.

(f) When sealants are applied to ventilation controls, the sealant shall have a flame-spread index of 25 or less under ASTM E162-87, "Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source." This publication is incorporated by reference and may be inspected at any MSHA Coal Mine Safety and Health District Office, or at MSHA's Office of Standards, Regulations, and Variances, 201 12th Street South, Arlington, VA 22202-5452; 202-693-9440; and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. In addition, copies

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(g) Before mining is discontinued in an entry or room that is advanced more than 20 feet from the inby rib, a crosscut shall be made or line brattice shall be installed and maintained to provide adequate ventilation. When conditions such as methane liberation warrant a distance less than 20 feet, the approved ventilation plan shall specify the location of such rooms or entries and the maximum distance they will be developed before a crosscut is made or line brattice is installed.

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(h) All ventilation controls, including seals, shall be maintained to serve the purpose for which they were built.

[61 FR 9829, Mar. 11, 1996; 61 FR 20877, May 8, 1996; 61 FR 26442, May 28, 1996; 61 FR 29288, 29289, June 10, 1996, as amended at 67 FR 38386, June 4, 2002; 71 FR 16668, Apr. 3, 2006; 73 FR 80612, Dec. 31, 2008; 80 FR 52991, Sept. 2, 2015]

§ 75.334 Worked-out areas and areas where pillars are being recovered.

(a) Worked-out areas where no pillars have been recovered shall be—

- (1) Ventilated so that methane-air mixtures and other gases, dusts, and fumes from throughout the worked-out areas are continuously diluted and routed into a return air course or to the surface of the mine; or
- (2) Sealed.

(b)(1) During pillar recovery a bleeder system shall be used to control the air passing through the area and to continuously dilute and move methane-air mixtures and other gases, dusts, and fumes from the worked-out area away from active workings and into a return air course or to the surface of the mine.

(2) After pillar recovery a bleeder system shall be maintained to provide ventilation to the worked-out area, or the area shall be sealed.

(c) The approved ventilation plan shall specify the following:

- (1) The design and use of bleeder systems;
- (2) The means to determine the effectiveness of bleeder systems;
- (3) The means for adequately maintaining bleeder entries free of obstructions such as roof falls and standing water; and
- (4) The location of ventilating devices such as regulators, stoppings and bleeder connectors used to control air movement through the worked-out area.

(d) If the bleeder system used does not continuously dilute and move methane-air mixtures and other gases, dusts, and fumes away from worked-out areas into a return air course or to the surface of the mine, or it cannot be determined by examinations or evaluations under § 75.364 that the bleeder system is working effectively, the worked-out area shall be sealed.

(e) Each mining system shall be designed so that each worked-out area can be sealed. The approved ventilation plan shall specify the location and the sequence of construction of proposed seals.

(f) In place of the requirements of paragraphs (a) and (b) of this section, for mines with a demonstrated history of spontaneous combustion, or that are located in a coal seam determined to be susceptible to spontaneous combustion, the approved ventilation plan shall specify the following:

(1) Measures to detect methane, carbon monoxide, and oxygen concentrations during and after pillar recovery, and in worked-out areas where no pillars have been recovered, to determine if the areas must be ventilated or sealed.

(2) Actions that will be taken to protect miners from the hazards of spontaneous combustion.

(3) If a bleeder system will not be used, the methods that will be used to control spontaneous combustion, accumulations of methane-air mixtures, and other gases, dusts, and fumes in the worked-out area.

§ 75.335 Seal strengths, design applications, and installation.

(a) *Seal strengths.* Seals constructed on or after October 20, 2008 shall be designed, constructed, and maintained to withstand—

(1)(i) At least 50-psi overpressure when the atmosphere in the sealed area is monitored and maintained inert and designed using a pressure-time curve with an instantaneous overpressure of at least 50 psi. A minimum overpressure of at least 50 psi shall be maintained for at least four seconds then released instantaneously.

(ii) Seals constructed to separate the active longwall panel from the longwall panel previously mined shall be designed using a pressure-time curve with a rate of pressure rise of at least 50 psi in 0.1 second. A minimum overpressure of at least 50 psi shall be maintained; or

(2)(i) Overpressures of at least 120 psi if the atmosphere in the sealed area is not monitored, is not maintained inert, the conditions in paragraphs (a)(3)(i) through (iii) of this section are not

present, and the seal is designed using a pressure-time curve with an instantaneous overpressure of at least 120 psi. A minimum overpressure of 120 psi shall be maintained for at least four seconds then released instantaneously.

(ii) Seals constructed to separate the active longwall panel from the longwall panel previously mined shall be designed using a pressure-time curve with a rate of pressure rise of 120 psi in 0.25 second. A minimum overpressure of 120 psi shall be maintained; or

(3) Overpressures greater than 120 psi if the atmosphere in the sealed area is not monitored and is not maintained inert, and

(i) The atmosphere in the sealed area is likely to contain homogeneous mixtures of methane between 4.5 percent and 17.0 percent and oxygen exceeding 17.0 percent throughout the entire area;

(ii) Pressure piling could result in overpressures greater than 120 psi in the area to be sealed; or

(iii) Other conditions are encountered, such as the likelihood of a detonation in the area to be sealed.

(iv) Where the conditions in paragraphs (a)(3)(i), (ii), or (iii) of this section are encountered, the mine operator shall revise the ventilation plan to address the potential hazards. The plan shall include seal strengths sufficient to address such conditions.

(b) *Seal design applications.* Seal design applications from seal manufacturers or mine operators shall be in accordance with paragraph (b)(1) or (2) of this section and submitted for approval to MSHA's Office of Technical Support, Pittsburgh Safety and Health Technology Center, 626 Cochran's Mill Road, Building 151, Pittsburgh, PA 15236-3611.

(1) An engineering design application shall—

(i) Address gas sampling pipes, water drainage systems, methods to reduce air leakage, pressure-time curve, fire resistance characteristics, flame spread index, entry size, engineering design and analysis, elasticity of design, material properties, construction specifications, quality control, design references, and other information related to seal construction;

(ii) Be certified by a professional engineer that the design of the seal is in

accordance with current, prudent engineering practices and is applicable to conditions in an underground coal mine; and

(iii) Include a summary of the installation procedures related to seal construction; or

(2) Each application based on full-scale explosion tests or equivalent means of physical testing shall address the following requirements to ensure that a seal can reliably meet the seal strength requirements:

(i) Certification by a professional engineer that the testing was done in accordance with current, prudent engineering practices for construction in a coal mine;

(ii) Technical information related to the methods and materials;

(iii) Supporting documentation;

(iv) An engineering analysis to address differences between the seal support during test conditions and the range of conditions in a coal mine; and

(v) A summary of the installation procedures related to seal construction.

(3) MSHA will notify the applicant if additional information or testing is required. The applicant shall provide this information, arrange any additional or repeat tests, and provide prior notification to MSHA of the location, date, and time of such test(s).

(4) MSHA will notify the applicant, in writing, whether the design is approved or denied. If the design is denied, MSHA will specify, in writing, the deficiencies of the application, or necessary revisions.

(5) Once the seal design is approved, the approval holder shall promptly notify MSHA, in writing, of all deficiencies of which they become aware.

(c) *Seal installation approval.* The installation of the approved seal design shall be subject to approval in the ventilation plan. The mine operator shall—

(1) Retain the seal design approval and installation information for as long as the seal is needed to serve the purpose for which it was built.

(2) Designate a professional engineer to conduct or have oversight of seal installation and certify that the provisions in the approved seal design specified in this section have been addressed

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and are applicable to conditions at the mine. A copy of the certification shall be submitted to the District Manager with the information provided in paragraph (c)(3) of this section and a copy of the certification shall be retained for as long as the seal is needed to serve the purpose for which it was built.

(3) Provide the following information for approval in the ventilation plan—

(i) The MSHA Technical Support Approval Number;

(ii) A summary of the installation procedures;

(iii) The mine map of the area to be sealed and proposed seal locations that include the deepest points of penetration prior to sealing. The mine map shall be certified by a professional engineer or a professional land surveyor.

(iv) Specific mine site information, including—

(A) Type of seal;

(B) Safety precautions taken prior to seal achieving design strength;

(C) Methods to address site-specific conditions that may affect the strength and applicability of the seal including set-back distances;

(D) Site preparation;

(E) Sequence of seal installations;

(F) Projected date of completion of each set of seals;

(G) Supplemental roof support inby and outby each seal;

(H) Water flow estimation and dimensions of the water drainage system through the seals;

(I) Methods to ventilate the outby face of seals once completed;

(J) Methods and materials used to maintain each type of seal;

(K) Methods to address shafts and boreholes in the sealed area;

(L) Assessment of potential for overpressures greater than 120 psi in sealed area;

(M) Additional sampling locations; and

(N) Additional information required by the District Manager.

[73 FR 21206, Apr. 18, 2008, as amended at 80 FR 52982, Sept. 2, 2015]

§ 75.336 Sampling and monitoring requirements.

(a) A certified person as defined in § 75.100 shall monitor atmospheres of

sealed areas. Sealed areas shall be monitored, whether ingassing or outgassing, for methane and oxygen concentrations and the direction of leakage.

(1) Each sampling pipe and approved sampling location shall be sampled at least every 24 hours.

(i) Atmospheres with seals of 120 psi or greater shall be sampled until the design strength is reached for every seal used to seal the area.

(ii) Atmospheres with seals less than 120 psi constructed before October 20, 2008 shall be monitored for methane and oxygen concentrations and maintained inert. The operator may request that the District Manager approve different sampling locations and frequencies in the ventilation plan, provided at least one sample is taken at each set of seals at least every 7 days.

(iii) Atmospheres with seals less than 120 psi constructed after October 20, 2008 shall be monitored for methane and oxygen concentrations and maintained inert. The operator may request that the District Manager approve different sampling locations and frequencies in the ventilation plan after a minimum of 14 days and after the seal design strength is reached, provided at least one sample is taken at each set of seals at least every 7 days.

(2) The mine operator shall evaluate the atmosphere in the sealed area to determine whether sampling through the sampling pipes in seals and approved locations provides appropriate sampling locations of the sealed area. The mine operator shall make the evaluation immediately after the minimum 14-day required sampling, if the mine ventilation system is reconfigured, if changes occur that adversely affect the sealed area, or if the District Manager requests an evaluation. When the results of the evaluations indicate the need for additional sampling locations, the mine operator shall provide the additional locations and have them approved in the ventilation plan. The District Manager may require additional sampling locations and frequencies in the ventilation plan.

(3) Mine operators with an approved ventilation plan addressing spontaneous combustion pursuant to § 75.334(f)

shall sample the sealed atmosphere in accordance with the ventilation plan.

(4) The District Manager may approve in the ventilation plan the use of a continuous monitoring system in lieu of monitoring provisions in this section.

(b)(1) Except as provided in § 75.336(d), the atmosphere in the sealed area is considered inert when the oxygen concentration is less than 10.0 percent or the methane concentration is less than 3.0 percent or greater than 20.0 percent.

(2) Immediate action shall be taken by the mine operator to restore an inert sealed atmosphere behind seals with strengths less than 120 psi. Until the atmosphere in the sealed area is restored to an inert condition, the sealed atmosphere shall be monitored at each sampling pipe and approved location at least once every 24 hours.

(c) Except as provided in § 75.336(d), when a sample is taken from the sealed atmosphere with seals of less than 120 psi and the sample indicates that the oxygen concentration is 10 percent or greater and methane is between 4.5 percent and 17 percent, the mine operator shall immediately take an additional sample and then immediately notify the District Manager. When the additional sample indicates that the oxygen concentration is 10 percent or greater and methane is between 4.5 percent and 17 percent, persons shall be withdrawn from the affected area which is the entire mine or other affected area identified by the operator and approved by the District Manager in the ventilation plan, except those persons referred to in § 104(c) of the Act. The operator may identify areas in the ventilation plan to be approved by the District Manager where persons may be exempted from withdrawal. The operator's request shall address the location of seals in relation to: Areas where persons work and travel in the mine; escapeways and potential for damage to the escapeways; and ventilation systems and controls in areas where persons work or travel and where ventilation is used for escapeways. The operator's request shall also address the gas concentration of other sampling locations in the sealed area and other required information. Before miners reenter the mine,

the mine operator shall have a ventilation plan revision approved by the District Manager specifying the actions to be taken.

(d) In sealed areas with a demonstrated history of carbon dioxide or sealed areas where inert gases have been injected, the operator may request that the District Manager approve in the ventilation plan an alternative method to determine if the sealed atmosphere is inert and when miners have to be withdrawn. The mine operator shall address in the ventilation plan the specific levels of methane, carbon dioxide, nitrogen and oxygen; the sampling methods and equipment used; and the methods to evaluate these concentrations underground at the seal.

(e) *Recordkeeping.* (1) The certified person shall promptly record each sampling result including the location of the sampling points, whether ingassing or outgassing, and oxygen and methane concentrations. The results of oxygen and methane samples shall be recorded as the percentage of oxygen and methane measured by the certified person and any hazardous condition found in accordance with § 75.363.

(2) The mine operator shall retain sampling records at the mine for at least one year from the date of the sampling.

[73 FR 21207, Apr. 18, 2008; 73 FR 27730, May 14, 2008]

§ 75.337 Construction and repair of seals.

(a) The mine operator shall maintain and repair seals to protect miners from hazards of sealed areas.

(b) Prior to sealing, the mine operator shall—

(1) Remove insulated cables, batteries, and other potential electric ignition sources from the area to be sealed when constructing seals, unless it is not safe to do so. If ignition sources cannot safely be removed, seals must be constructed to at least 120 psi;

(2) Remove metallic objects through or across seals; and

(3) Breach or remove all stoppings in the first crosscut in by the seals immediately prior to sealing the area.

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(c) A certified person designated by the mine operator shall directly supervise seal construction and repair and—

(1) Examine each seal site immediately prior to construction or repair to ensure that the site is in accordance with the approved ventilation plan;

(2) Examine each seal under construction or repair during each shift to ensure that the seal is being constructed or repaired in accordance with the approved ventilation plan;

(3) Examine each seal upon completion of construction or repair to ensure that construction or repair is in accordance with the approved ventilation plan;

(4) Certify by initials, date, and time that the examinations were made; and

(5) Make a record of the examination at the completion of any shift during which an examination was conducted. The record shall include each deficiency and the corrective action taken. The record shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The record shall be kept at the mine for one year.

(d) Upon completion of construction of each seal a senior mine management official, such as a mine manager or superintendent, shall certify that the construction, installation, and materials used were in accordance with the approved ventilation plan. The mine operator shall retain the certification for as long as the seal is needed to serve the purpose for which it was built.

(e) The mine operator shall—

(1) Notify the District Manager between two and fourteen days prior to commencement of seal construction;

(2) Notify the District Manager, in writing, within five days of completion of a set of seals and provide a copy of the certification required in paragraph (d) of this section; and

(3) Submit a copy of quality control results to the District Manager for seal material properties specified by § 75.335 within 30 days of completion of quality control tests.

(f) *Welding, cutting, and soldering.* Welding, cutting, and soldering with an arc or flame are prohibited within 150

feet of a seal. An operator may request a different location in the ventilation plan to be approved by the District Manager. The operator's request must address methods the mine operator will use to continuously monitor atmospheric conditions in the sealed area during welding or burning; the airflow conditions in and around the work area; the rock dust and water application methods; the availability of fire extinguishers on hand; the procedures to maintain safe conditions, and other relevant factors.

(g) *Sampling pipes.* (1) For seals constructed after April 18, 2008, one non-metallic sampling pipe shall be installed in each seal that shall extend into the center of the first connecting crosscut inby the seal. If an open crosscut does not exist, the sampling pipe shall extend one-half of the distance of the open entry inby the seal.

(2) Each sampling pipe shall be equipped with a shut-off valve and appropriate fittings for taking gas samples.

(3) The sampling pipes shall be labeled to indicate the location of the sampling point when more than one sampling pipe is installed through a seal.

(4) If a new seal is constructed to replace or reinforce an existing seal with a sampling pipe, the sampling pipe in the existing seal shall extend through the new seal. An additional sampling pipe shall be installed through each new seal to sample the area between seals, as specified in the approved ventilation plan.

(h) *Water drainage system.* For each set of seals constructed after April 18, 2008, the seal at the lowest elevation shall have a corrosion-resistant, non-metallic water drainage system. Seals shall not impound water or slurry. Water or slurry shall not accumulate within the sealed area to any depth that can adversely affect a seal.

[73 FR 21207, Apr. 18, 2008]

§ 75.338 Training.

(a) Certified persons conducting sampling shall be trained in the use of appropriate sampling equipment, procedures, location of sampling points, frequency of sampling, size and condition

of the sealed area, and the use of continuous monitoring systems if applicable before they conduct sampling, and annually thereafter. The mine operator shall certify the date of training provided to certified persons and retain each certification for two years.

(b) Miners constructing or repairing seals, designated certified persons, and senior mine management officials shall be trained prior to constructing or repairing a seal and annually thereafter. The training shall address materials and procedures in the approved seal de-

sign and ventilation plan. The mine operator shall certify the date of training provided each miner, certified person, and senior mine management official and retain each certification for two years.

[73 FR 21208, Apr. 18, 2008]

§ 75.339 Seals records.

(a) The table entitled “Seal Record-keeping Requirements” lists records the operator shall maintain and the retention period for each record.

TABLE—§ 75.339(a) SEAL RECORDKEEPING REQUIREMENTS

Record	Section reference	Retention time
(1) Approved seal design	75.335(c)(1)	As long as the seal is needed to serve the purpose for which it is built.
(2) Certification of Provisions of Approved Seal Design is Addressed.	75.335(c)(2)	As long as the seal is needed to serve the purpose for which it is built.
(3) Gas sampling records	75.336(e)(2)	1 year.
(4) Record of examinations	75.337(c)(5)	1 year.
(5) Certification of seal construction, installation, and materials.	75.337(d)	As long as the seal is needed to serve the purpose for which it is built.
(6) Certification of Training for Persons that Sample.	75.338(a)	2 years.
(7) Certification of Training for Persons that Perform Seal Construction and Repair.	75.338(b)	2 years.

(b) Records required by §§75.335, 75.336, 75.337 and 75.338 shall be retained at a surface location at the mine in a secure book that is not susceptible to alteration. The records may be retained electronically in a computer system that is secure and not susceptible to alteration, if the mine operator can immediately access the record from the mine site.

(c) Upon request from an authorized representative of the Secretary of Labor, the Secretary of Health and Human Services, or from the authorized representative of miners, mine operators shall promptly provide access to any record listed in the table in this section.

(d) Whenever an operator ceases to do business or transfers control of the mine to another entity, that operator shall transfer all records required to be maintained by this part, or a copy thereof, to any successor operator who shall maintain them for the required period.

[73 FR 21208, Apr. 18, 2008]

§ 75.340 Underground electrical installations.

(a) Underground transformer stations, battery charging stations, substations, rectifiers, and water pumps shall be housed in noncombustible structures or areas or be equipped with a fire suppression system meeting the requirements of §75.1107-3 through §75.1107-16.

(1) When a noncombustible structure or area is used, these installations shall be—

(i) Ventilated with intake air that is coursed into a return air course or to the surface and that is not used to ventilate working places; or

(ii) Ventilated with intake air that is monitored for carbon monoxide or smoke by an AMS installed and operated according to §75.351. Monitoring of intake air ventilating battery charging stations shall be done with sensors not affected by hydrogen; or

(iii) Ventilated with intake air and equipped with sensors to monitor for heat and for carbon monoxide or smoke. Monitoring of intake air ventilating battery charging stations shall

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be done with sensors not affected by hydrogen. The sensors shall deenergize power to the installation, activate a visual and audible alarm located outside of and on the intake side of the enclosure, and activate doors that will automatically close when either of the following occurs:

(A) The temperature in the non-combustible structure reaches 165 °F; or

(B) The carbon monoxide concentration reaches 10 parts per million above the ambient level for the area, or the optical density of smoke reaches 0.022 per meter. At least every 31 days, sensors installed to monitor for carbon monoxide shall be calibrated with a known concentration of carbon monoxide and air sufficient to activate the closing door, or each smoke sensor shall be tested to determine that it functions correctly.

(2) When a fire suppression system is used, these installations shall be—

(i) Ventilated with intake air that is coursed into a return air course or to the surface and that is not used to ventilate working places; or

(ii) Ventilated with intake air that is monitored for carbon monoxide or smoke by an AMS installed and operated according to § 75.351. Monitoring of intake air ventilating battery charging stations shall be done with sensors not affected by hydrogen.

(b) This section does not apply to—

(1) Rectifiers and power centers with transformers that are either dry-type or contain nonflammable liquid, if they are located at or near the section and are moved as the working section advances or retreats;

(2) Submersible pumps;

(3) Permissible pumps and associated permissible switchgear;

(4) Pumps located on or near the section and that are moved as the working section advances or retreats;

(5) Pumps installed in anthracite mines; and

(6) Small portable pumps.

§ 75.341 Direct-fired intake air heaters.

(a) If any system used to heat intake air malfunctions, the heaters affected shall switch off automatically.

(b) Thermal overload devices shall protect the blower motor from overheating.

(c) The fuel supply shall turn off automatically if a flame-out occurs.

(d) Each heater shall be located or guarded to prevent contact by persons and shall be equipped with a screen at the inlet to prevent combustible materials from passing over the burner units.

(e) If intake air heaters use liquefied fuel systems—

(1) Hydrostatic relief valves installed on vaporizers and on storage tanks shall be vented; and

(2) Fuel storage tanks shall be located or protected to prevent fuel from leaking into the mine.

(f) Following any period of 8 hours or more during which a heater does not operate, the heater and its associated components shall be examined within its first hour of operation. Additionally, each heater and its components shall be examined at least once each shift that the heater operates. The examination shall include measurement of the carbon monoxide concentration at the bottom of each shaft, slope, or in the drift opening where air is being heated. The measurements shall be taken by a person designated by the operator or by a carbon monoxide sensor that is calibrated with a known concentration of carbon monoxide and air at least once every 31 days. When the carbon monoxide concentration at this location reaches 50 parts per million, the heater causing the elevated carbon monoxide level shall be shut down.

§ 75.342 Methane monitors.

(a)(1) MSHA approved methane monitors shall be installed on all face cutting machines, continuous miners, longwall face equipment, loading machines, and other mechanized equipment used to extract or load coal within the working place.

(2) The sensing device for methane monitors on longwall shearing machines shall be installed at the return air end of the longwall face. An additional sensing device also shall be installed on the longwall shearing machine, downwind and as close to the

cutting head as practicable. An alternative location or locations for the sensing device required on the longwall shearing machine may be approved in the ventilation plan.

(3) The sensing devices of methane monitors shall be installed as close to the working face as practicable.

(4) Methane monitors shall be maintained in permissible and proper operating condition and shall be calibrated with a known air-methane mixture at least once every 31 days. To assure that methane monitors are properly maintained and calibrated, the operator shall:

(i) Use persons properly trained in the maintenance, calibration, and permissibility of methane monitors to calibrate and maintain the devices.

(ii) Maintain a record of all calibration tests of methane monitors. Records shall be maintained in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(iii) Retain the record of calibration tests for 1 year from the date of the test. Records shall be retained at a surface location at the mine and made available for inspection by authorized representatives of the Secretary and the representative of miners.

(b)(1) When the methane concentration at any methane monitor reaches 1.0 percent the monitor shall give a warning signal.

(2) The warning signal device of the methane monitor shall be visible to a person who can deenergize electric equipment or shut down diesel-powered equipment on which the monitor is mounted.

(c) The methane monitor shall automatically deenergize electric equipment or shut down diesel-powered equipment on which it is mounted when—

(1) The methane concentration at any methane monitor reaches 2.0 percent; or

(2) The monitor is not operating properly.

[61 FR 9829, Mar. 11, 1996, as amended at 61 FR 55527, Oct. 25, 1996]

§ 75.343 Underground shops.

(a) Underground shops shall be equipped with an automatic fire suppression system meeting the requirements of § 75.1107-3 through § 75.1107-16, or be enclosed in a noncombustible structure or area.

(b) Underground shops shall be ventilated with intake air that is coursed directly into a return air course.

§ 75.344 Compressors.

(a) Except compressors that are components of equipment such as locomotives and rock dusting machines and compressors of less than 5 horsepower, electrical compressors including those that may start automatically shall be:

(1) Continuously attended by a person designated by the operator who can see the compressor at all times during its operation. Any designated person attending the compressor shall be capable of activating the fire suppression system and deenergizing or shutting-off the compressor in the event of a fire; or,

(2) Enclosed in a noncombustible structure or area which is ventilated by intake air coursed directly into a return air course or to the surface and equipped with sensors to monitor for heat and for carbon monoxide or smoke. The sensors shall deenergize power to the compressor, activate a visual and audible alarm located outside of and on the intake side of the enclosure, and activate doors to automatically enclose the noncombustible structure or area when either of the following occurs:

(i) The temperature in the noncombustible structure or area reaches 165 °F.

(ii) The carbon monoxide concentration reaches 10 parts per million above the ambient level for the area, or the optical density of smoke reaches 0.022 per meter. At least once every 31 days, sensors installed to monitor for carbon monoxide shall be calibrated with a known concentration of carbon monoxide and air sufficient to activate the closing door, and each smoke sensor shall be tested to determine that it functions correctly.

(b) Compressors, except those exempted in paragraph (a), shall be

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equipped with a heat activated fire suppression system meeting the requirements of 75.1107–3 through 75.1107–16.

(c) Two portable fire extinguishers or one extinguisher having at least twice the minimum capacity specified for a portable fire extinguisher in §75.1100–1(e) shall be provided for each compressor.

(d) Notwithstanding the requirements of §75.1107–4, upon activation of any fire suppression system used under paragraph (b) of this section, the compressor shall be automatically deenergized or automatically shut off.

[61 FR 9829, Mar. 11, 1996, as amended at 61 FR 55527, Oct. 25, 1996]

§ 75.350 Belt air course ventilation.

(a) The belt air course must not be used as a return air course; and except as provided in paragraph (b) of this section, the belt air course must not be used to provide air to working sections or to areas where mechanized mining equipment is being installed or removed.

(1) The belt air course must be separated with permanent ventilation controls from return air courses and from other intake air courses except as provided in paragraph (c) of this section.

(2) Effective December 31, 2009, the air velocity in the belt entry must be at least 50 feet per minute. When requested by the mine operator, the district manager may approve lower velocities in the ventilation plan based on specific mine conditions. Air velocities must be compatible with all fire detection systems and fire suppression systems used in the belt entry.

(b) The use of air from a belt air course to ventilate a working section, or an area where mechanized mining equipment is being installed or removed, shall be permitted only when evaluated and approved by the district manager in the mine ventilation plan. The mine operator must provide justification in the plan that the use of air from a belt entry would afford at least the same measure of protection as where belt haulage entries are not used to ventilate working places. In addition, the following requirements must be met:

(1) The belt entry must be equipped with an AMS that is installed, oper-

ated, examined, and maintained as specified in §75.351.

(2) All miners must be trained annually in the basic operating principles of the AMS, including the actions required in the event of activation of any AMS alert or alarm signal. This training must be conducted prior to working underground in a mine that uses belt air to ventilate working sections or areas where mechanized mining equipment is installed or removed. It must be conducted as part of a miner's 30 CFR part 48 new miner training (§48.5), experienced miner training (§48.6), or annual refresher training (§48.8).

(3)(i) The average concentration of respirable dust in the belt air course, when used as a section intake air course, shall be maintained at or below:

(A) 1.0 mg/m³.

(B) 0.5 mg/m³ as of August 1, 2016.

(ii) Where miners on the working section are on a reduced standard below that specified in §75.350(b)(3)(i), the average concentration of respirable dust in the belt entry must be at or below the lowest applicable standard on that section.

(iii) A permanent designated area (DA) for dust measurements must be established at a point no greater than 50 feet upwind from the section loading point in the belt entry when the belt air flows over the loading point or no greater than 50 feet upwind from the point where belt air is mixed with air from another intake air course near the loading point. The DA must be specified and approved in the ventilation plan.

(4) The primary escapeway must be monitored for carbon monoxide or smoke as specified in §75.351(f).

(5) The area of the mine with a belt air course must be developed with three or more entries.

(6) In areas of the mine developed after the effective date of this rule, unless approved by the district manager, no more than 50% of the total intake air, delivered to the working section or to areas where mechanized mining equipment is being installed or removed, can be supplied from the belt air course. The locations for measuring these air quantities must be approved in the mine ventilation plan.

(7) The air velocity in the belt entry must be at least 100 feet per minute. When requested by the mine operator, the district manager may approve lower velocities in the ventilation plan based on specific mine conditions.

(8) The air velocity in the belt entry must not exceed 1,000 feet per minute. When requested by the mine operator, the district manager may approve higher velocities in the ventilation plan based on specific mine conditions.

(c) Notwithstanding the provisions of § 75.380(g), additional intake air may be added to the belt air course through a point-feed regulator. The location and use of point feeds must be approved in the mine ventilation plan.

(d) If the air through the point-feed regulator enters a belt air course which is used to ventilate a working section or an area where mechanized mining equipment is being installed or removed, the following conditions must be met:

(1) The air current that will pass through the point-feed regulator must be monitored for carbon monoxide or smoke at a point within 50 feet upwind of the point-feed regulator. A second point must be monitored 1,000 feet upwind of the point-feed regulator unless the mine operator requests that a lesser distance be approved by the district manager in the mine ventilation plan based on mine specific conditions;

(2) The air in the belt air course must be monitored for carbon monoxide or smoke upwind of the point-feed regulator. This sensor must be in the belt air course within 50 feet of the mixing point where air flowing through the point-feed regulator mixes with the belt air;

(3) The point-feed regulator must be provided with a means to close the regulator from the intake air course without requiring a person to enter the crosscut where the point-feed regulator is located. The point-feed regulator must also be provided with a means to close the regulator from a location in the belt air course immediately upwind of the crosscut containing the point-feed regulator;

(4) A minimum air velocity of 300 feet per minute must be maintained through the point-feed regulator;

(5) The location(s) and use of a point-feed regulator(s) must be approved in the mine ventilation plan and shown on the mine ventilation map; and

(6) An AMS must be installed, operated, examined, and maintained as specified in § 75.351.

[69 FR 17526, Apr. 2, 2004, as amended at 70 FR 37266, June 29, 2005; 71 FR 12269, Mar. 9, 2006; 73 FR 80612, Dec. 31, 2008; 79 FR 24987, May 1, 2014]

§ 75.351 Atmospheric monitoring systems.

(a) *AMS operation.* Whenever personnel are underground and an AMS is used to fulfill the requirements of §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(d), or 75.362(f), the AMS must be operating and a designated AMS operator must be on duty at a location on the surface of the mine where audible and visual signals from the AMS must be seen or heard and the AMS operator can promptly respond to these signals.

(b) *Designated surface location and AMS operator.* When an AMS is used to comply with §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(d), or 75.362(f), the following requirements apply:

(1) The mine operator must designate a surface location at the mine where signals from the AMS will be received and two-way voice communication is maintained with each working section, with areas where mechanized mining equipment is being installed or removed, and with other areas designated in the approved emergency evacuation and firefighting program of instruction (§ 75.1502).

(2) The mine operator must designate an AMS operator to monitor and promptly respond to all AMS signals. The AMS operator must have as a primary duty the responsibility to monitor the malfunction, alert and alarm signals of the AMS, and to notify appropriate personnel of these signals. In the event of an emergency, the sole responsibility of the AMS operator shall be to respond to the emergency.

(3) A map or schematic must be provided at the designated surface location that shows the locations and type of AMS sensor at each location, and the intended air flow direction at these

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locations. This map or schematic must be updated within 24 hours of any change in this information.

(4) The names of the designated AMS operators and other appropriate personnel, including the designated person responsible for initiating an emergency mine evacuation under § 75.1501, and the method to contact these persons, must be provided at the designated surface location.

(c) *Minimum operating requirements.* AMSs used to comply with §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(d), or 75.362(f) must:

(1) Automatically provide visual and audible signals at the designated surface location for any interruption of circuit continuity and any electrical malfunction of the system. These signals must be of sufficient magnitude to be seen or heard by the AMS operator.

(2) Automatically provide visual and audible signals at the designated surface location when the carbon monoxide concentration or methane concentration at any sensor reaches the alert level as specified in § 75.351(i). These signals must be of sufficient magnitude to be seen or heard by the AMS operator.

(3) Automatically provide visual and audible signals at the designated surface location distinguishable from alert signals when the carbon monoxide, smoke, or methane concentration at any sensor reaches the alarm level as specified in § 75.351(i). These signals must be of sufficient magnitude to be seen or heard by the AMS operator.

(4) Automatically provide visual and audible signals at all affected working sections and at all affected areas where mechanized mining equipment is being installed or removed when the carbon monoxide, smoke, or methane concentration at any sensor reaches the alarm level as specified in § 75.351(i). These signals must be of sufficient magnitude to be seen or heard by miners working at these locations. Methane signals must be distinguishable from other signals.

(5) Automatically provide visual and audible signals at other locations as specified in Mine Emergency Evacuation and Firefighting Program of In-

struction (§ 75.1502) when the carbon monoxide, smoke, or methane concentration at any sensor reaches the alarm level as specified in § 75.351(i). These signals must be seen or heard by miners working at these locations. Methane alarms must be distinguishable from other signals.

(6) Identify at the designated surface location the operational status of all sensors.

(7) Automatically provide visual and audible alarm signals at the designated surface location, at all affected working sections, and at all affected areas where mechanized mining equipment is being installed or removed when the carbon monoxide level at any two consecutive sensors alert at the same time. These signals must be seen or heard by the AMS operator and miners working at these locations.

(d) *Location and installation of AMS sensors.* (1) All AMS sensors, as specified in §§ 75.351(e) through 75.351(h), must be located such that measurements are representative of the mine atmosphere in these locations.

(2) Carbon monoxide or smoke sensors must be installed near the center in the upper third of the entry, in a location that does not expose personnel working on the system to unsafe conditions. Sensors must not be located in abnormally high areas or in other locations where air flow patterns do not permit products of combustion to be carried to the sensors.

(3) Methane sensors must be installed near the center of the entry, at least 12 inches from the roof, ribs, and floor, in a location that would not expose personnel working on the system to unsafe conditions.

(e) *Location of sensors-belt air course.* (1) In addition to the requirements of paragraph (d) of this section, any AMS used to monitor belt air courses under § 75.350(b) must have approved sensors to monitor for carbon monoxide at the following locations:

(i) At or near the working section belt tailpiece in the air stream ventilating the belt entry. In longwall mining systems the sensor must be located upwind in the belt entry at a distance no greater than 150 feet from the mixing point where intake air is mixed

with the belt air at or near the tailpiece;

(ii) No more than 50 feet upwind from the point where the belt air course is combined with another air course or splits into multiple air courses;

(iii) At intervals not to exceed 1,000 feet along each belt entry. However, in areas along each belt entry where air velocities are between 50 and 100 feet per minute, spacing of sensors must not exceed 500 feet. In areas along each belt entry where air velocities are less than 50 feet per minute, the sensor spacing must not exceed 350 feet;

(iv) Not more than 100 feet downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. If the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up; and

(v) At other locations in any entry that is part of the belt air course as required and specified in the mine ventilation plan.

(2) Smoke sensors must be installed to monitor the belt entry under § 75.350(b) at the following locations:

(i) At or near the working section belt tailpiece in the air stream ventilating the belt entry. In longwall mining systems the sensor must be located upwind in the belt entry at a distance no greater than 150 feet from the mixing point where intake air is mixed with the belt air at or near the tailpiece;

(ii) Not more than 100 feet downwind of each belt drive unit, each tailpiece transfer point, and each belt take-up. If the belt drive, tailpiece, and/or take-up for a single transfer point are installed together in the same air course, and the distance between the units is less than 100 feet, they may be monitored with one sensor downwind of the last component. If the distance between the units exceeds 100 feet, additional sensors are required downwind of each belt drive unit, each tailpiece, transfer point, and each belt take-up; and

(iii) At intervals not to exceed 3,000 feet along each belt entry.

(iv) This provision shall be effective one year after the Secretary has determined that a smoke sensor is available to reliably detect fire in underground coal mines.

(f) *Locations of sensors—the primary escapeway.* When used to monitor the primary escapeway under § 75.350(b)(4), carbon monoxide or smoke sensors must be located in the primary escapeway within 500 feet of the working section and areas where mechanized mining equipment is being installed or removed. In addition, another sensor must be located within 500 feet inby the beginning of the panel. The point-feed sensor required by § 75.350(d)(1) may be used as the sensor at the beginning of the panel if it is located within 500 feet inby the beginning of the panel.

(g) *Location of sensors—return air splits.* (1) If used to monitor return air splits under § 75.362(f), a methane sensor must be installed in the return air split between the last working place, longwall or shortwall face ventilated by that air split, and the junction of the return air split with another air split, seal, or worked out area.

(2) If used to monitor a return air split under § 75.323(d)(1)(ii), the methane sensors must be installed at the following locations:

(i) In the return air course opposite the section loading point, or, if exhausting auxiliary fan(s) are used, in the return air course no closer than 300 feet downwind from the fan exhaust and at a point opposite or immediately outby the section loading point; and

(ii) Immediately upwind from the location where the return air split meets another air split or immediately upwind of the location where an air split is used to ventilate seals or worked-out areas.

(h) *Location of sensors—electrical installations.* When monitoring the intake air ventilating underground transformer stations, battery charging stations, substations, rectifiers, or water pumps under § 75.340(a)(1)(ii) or § 75.340(a)(2)(ii), at least one sensor must be installed to monitor the mine atmosphere for carbon monoxide or smoke, located downwind and not

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greater than 50 feet from the electrical installation being monitored.

(i) *Establishing alert and alarm levels.* An AMS installed in accordance with the following paragraphs must initiate alert and alarm signals at the specified levels, as indicated:

(1) For § 75.323(d)(1)(ii) alarm at 1.5% methane.

(2) For §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), and 75.350(d), alert at 5 ppm carbon monoxide above the ambient level and alarm at 10 ppm carbon monoxide above the ambient level when carbon monoxide sensors are used; and alarm at a smoke optical density of 0.022 per meter when smoke sensors are used. Reduced alert and alarm settings approved by the district manager may be required for carbon monoxide sensors identified in the mine ventilation plan, § 75.371(nn).

(3) For § 75.362(f), alert at 1.0% methane and alarm at 1.5% methane.

(j) *Establishing carbon monoxide ambient levels.* Carbon monoxide ambient levels and the means to determine these levels must be approved in the mine ventilation plan (§ 75.371(hh)) for monitors installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), and 75.350(d).

(k) *Installation and maintenance.* An AMS installed in accordance with §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(d), or 75.362(f) must be installed and maintained by personnel trained in the installation and maintenance of the system. The system must be maintained in proper operating condition.

(l) *Sensors.* Sensors used to monitor for carbon monoxide, methane, and smoke must be either of a type listed and installed in accordance with the recommendations of a nationally recognized testing laboratory approved by the Secretary; or these sensors must be of a type, and installed in a manner, approved by the Secretary.

(m) *Time delays.* When a demonstrated need exists, time delays may be incorporated into the AMS. These time delays must only be used to account for non-fire related carbon monoxide alert and alarm sensor signals. These time delays are limited to no more than three minutes. The use and length of any time delays, or other

techniques or methods which eliminate or reduce the need for time delays, must be specified and approved in the mine ventilation plan.

(n) *Examination, testing, and calibration.* (1) At least once each shift when belts are operated as part of a production shift, sensors used to detect carbon monoxide or smoke in accordance with §§ 75.350(b), and 75.350(d), and alarms installed in accordance with § 75.350(b) must be visually examined.

(2) At least once every seven days, alarms for AMS installed in accordance with §§ 75.350(b), and 75.350(d) must be functionally tested for proper operation.

(3) At intervals not to exceed 31 days—

(i) Each carbon monoxide sensor installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), or 75.350(d) must be calibrated in accordance with the manufacturer's calibration specifications. Calibration must be done with a known concentration of carbon monoxide in air sufficient to activate the alarm;

(ii) Each smoke sensor installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), or 75.350(d) must be functionally tested in accordance with the manufacturer's calibration specifications;

(iii) Each methane sensor installed in accordance with §§ 75.323(d)(1)(ii) or 75.362(f) must be calibrated in accordance with the manufacturer's calibration specifications. Calibration must be done with a known concentration of methane in air sufficient to activate an alarm.

(iv) If the alert or alarm signals will be activated during calibration of sensors, the AMS operator must be notified prior to and upon completion of calibration. The AMS operator must notify miners on affected working sections, areas where mechanized mining equipment is being installed or removed, or other areas designated in the approved emergency evacuation and firefighting program of instruction (§ 75.1502) when calibration will activate alarms and when calibration is completed.

(4) Gases used for the testing and calibration of AMS sensors must be traceable to the National Institute of

Standards and Technology reference standard for the specific gas. When these reference standards are not available for a specific gas, calibration gases must be traceable to an analytical standard which is prepared using a method traceable to the National Institute of Standards and Technology. Calibration gases must be within ± 2.0 percent of the indicated gas concentration.

(o) *Recordkeeping.* (1) When an AMS is used to comply with §§ 75.323(d)(1)(ii), 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), 75.350(d), or 75.362(f), individuals designated by the operator must make the following records by the end of the shift in which the following event(s) occur:

(i) If an alert or alarm signal occurs, a record of the date, time, location and type of sensor, and the cause for the activation.

(ii) If an AMS malfunctions, a record of the date, the extent and cause of the malfunction, and the corrective action taken to return the system to proper operation.

(iii) A record of the seven-day tests of alert and alarm signals; calibrations; and maintenance of the AMS must be made by the person(s) performing these actions.

(2) The person entering the record must include their name, date, and signature in the record.

(3) The records required by this section must be kept either in a secure book that is not susceptible to alteration, or electronically in a computer system that is secure and not susceptible to alteration. These records must be maintained separately from other records and identifiable by a title, such as the 'AMS log.'

(p) *Retention period.* Records must be retained for at least one year at a surface location at the mine and made available for inspection by miners and authorized representatives of the Secretary.

(q) *Training.* (1) All AMS operators must be trained annually in the proper operation of the AMS. This training must include the following subjects:

(i) Familiarity with underground mining systems;

(ii) Basic atmospheric monitoring system requirements;

(iii) The mine emergency evacuation and firefighting program of instruction;

(iv) The mine ventilation system including planned air directions;

(v) Appropriate response to alert, alarm and malfunction signals;

(vi) Use of mine communication systems including emergency notification procedures; and

(vii) AMS recordkeeping requirements.

(2) At least once every six months, all AMS operators must travel to all working sections.

(3) A record of the content of training, the person conducting the training, and the date the training was conducted, must be maintained at the mine for at least one year by the mine operator.

(r) *Communications.* When an AMS is used to comply with § 75.350(b), a two-way voice communication system required by § 75.1600 must be installed in an entry that is separate from the entry in which the AMS is installed no later than August 2, 2004. The two-way voice communication system may be installed in the entry where the intake sensors required by §§ 75.350(b)(4) or 75.350(d)(1) are installed.

[69 FR 17527, Apr. 2, 2004, as amended at 73 FR 80612, Dec. 31, 2008]

§ 75.352 Actions in response to AMS malfunction, alert, or alarm signals.

(a) When a malfunction, alert, or alarm signal is received at the designated surface location, the sensor(s) that are activated must be identified and the AMS operator must promptly notify appropriate personnel.

(b) Upon notification of a malfunction, alert, or alarm signal, appropriate personnel must promptly initiate an investigation to determine the cause of the signal and take the required actions set forth in paragraphs (c), (d), or (e) of this section.

(c) If any sensor installed in accordance with §§ 75.340(a)(1)(ii), 75.340(a)(2)(ii), 75.350(b), or 75.350(d) indicates an alarm or if any two consecutive sensors indicate alert at the same time, the following procedures must be followed unless the cause of the signal(s) is known not to be a hazard to miners:

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(1) Appropriate personnel must notify miners in affected working sections, in affected areas where mechanized mining equipment is being installed or removed, and at other locations specified in the §75.1502 approved mine emergency evacuation and firefighting program of instruction; and

(2) All personnel in the affected areas, unless assigned other duties under §75.1502, must be withdrawn promptly to a safe location identified in the mine emergency evacuation and firefighting program of instruction.

(d) If there is an alert or alarm signal from a methane sensor installed in accordance with §§75.323(d)(1)(ii) and 75.362(f), an investigation must be initiated to determine the cause of the signal, and the actions required under §75.323 must be taken.

(e) If any fire detection components of the AMS malfunction or are inoperative, immediate action must be taken to return the system to proper operation. While the AMS component repairs are being made, operation of the belt may continue if the following conditions are met:

(1) If one AMS sensor malfunctions or becomes inoperative, a trained person must continuously monitor for carbon monoxide or smoke at the inoperative sensor.

(2) If two or more adjacent AMS sensors malfunction or become inoperative, a trained person(s) must patrol and continuously monitor for carbon monoxide or smoke so that the affected areas will be traveled each hour in their entirety, or a trained person must be stationed to monitor at each inoperative sensor.

(3) If the complete AMS malfunctions or becomes inoperative, trained persons must patrol and continuously monitor for carbon monoxide or smoke so that the affected areas will be traveled each hour in their entirety.

(4) The trained person(s) monitoring under this section must, at a minimum, have two-way voice communication capabilities with the AMS operator at intervals not to exceed 2,000 feet and report contaminant levels to the AMS operator at intervals not to exceed 60 minutes.

(5) The trained person(s) monitoring under this section must report imme-

diately to the AMS operator any concentration of the contaminant that reaches either the alert or alarm level specified in §75.351(i), or the alternate alert and alarm levels specified in paragraph (e)(7) of this section, unless the source of the contaminant is known not to present a hazard.

(6) Detectors used to monitor under this section must have a level of detectability equal to that required of the sensors in §75.351(1).

(7) For those AMSs using sensors other than carbon monoxide sensors, an alternate detector and the alert and alarm levels associated with that detector must be specified in the approved mine ventilation plan.

(f) If the minimum air velocity is not maintained when required under §75.350(b)(7), immediate action must be taken to return the ventilation system to proper operation. While the ventilation system is being corrected, operation of the belt may continue only while a trained person(s) patrols and continuously monitors for carbon monoxide or smoke as set forth in §§75.352(e)(3) through (7), so that the affected areas will be traveled each hour in their entirety.

(g) The AMS shall automatically provide both a visual and audible signal in the belt entry at the point-feed regulator location, at affected sections, and at the designated surface location when carbon monoxide concentrations reach:

(1) The alert level at both point-feed intake monitoring sensors; or

(2) The alarm level at either point-feed intake monitoring sensor.

[69 FR 17529, Apr. 2, 2004, as amended at 73 FR 80613, Dec. 31, 2008]

§ 75.360 Preshift examination at fixed intervals.

(a)(1) Except as provided in paragraph (a)(2) of this section, a certified person designated by the operator must make a preshift examination within 3 hours preceding the beginning of any 8-hour interval during which any person is scheduled to work or travel underground. No person other than certified examiners may enter or remain in any underground area unless a preshift examination has been completed for the

established 8-hour interval. The operator must establish 8-hour intervals of time subject to the required preshift examinations.

(2) Preshift examinations of areas where pumpers are scheduled to work or travel shall not be required prior to the pumper entering the areas if the pumper is a certified person and the pumper conducts an examination for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (b)(11) of this section, tests for methane and oxygen deficiency, and determines if the air is moving in its proper direction in the area where the pumper works or travels. The examination of the area must be completed before the pumper performs any other work. A record of all hazardous conditions and violations of the mandatory health or safety standards found by the pumper shall be made and retained in accordance with § 75.363 of this part.

(b) The person conducting the preshift examination shall examine for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (b)(11) of this section, test for methane and oxygen deficiency, and determine if the air is moving in its proper direction at the following locations:

(1) Roadways, travelways and track haulageways where persons are scheduled, prior to the beginning of the preshift examination, to work or travel during the oncoming shift.

(2) Belt conveyors that will be used to transport persons during the oncoming shift and the entries in which these belt conveyors are located.

(3) Working sections and areas where mechanized mining equipment is being installed or removed, if anyone is scheduled to work on the section or in the area during the oncoming shift. The scope of the examination shall include the working places, approaches to worked-out areas and ventilation controls on these sections and in these areas, and the examination shall include tests of the roof, face and rib conditions on these sections and in these areas.

(4) Approaches to worked-out areas along intake air courses and at the entries used to carry air into worked-out

areas if the intake air passing the approaches is used to ventilate working sections where anyone is scheduled to work during the oncoming shift. The examination of the approaches to the worked-out areas shall be made in the intake air course immediately inby and outby each entry used to carry air into the worked-out area. An examination of the entries used to carry air into the worked-out areas shall be conducted at a point immediately inby the intersection of each entry with the intake air course.

(5) Seals along intake air courses where intake air passes by a seal to ventilate working sections where anyone is scheduled to work during the oncoming shift.

(6)(i) Entries and rooms developed after November 15, 1992, and developed more than 2 crosscuts off an intake air course without permanent ventilation controls where intake air passes through or by these entries or rooms to reach a working section where anyone is scheduled to work during the oncoming shift; and,

(ii) Entries and rooms developed after November 15, 1992, and driven more than 20 feet off an intake air course without a crosscut and without permanent ventilation controls where intake air passes through or by these entries or rooms to reach a working section where anyone is scheduled to work during the oncoming shift.

(7) Areas where trolley wires or trolley feeder wires are to be or will remain energized during the oncoming shift.

(8) High spots along intake air courses where methane is likely to accumulate, if equipment will be operated in the area during the shift.

(9) Underground electrical installations referred to in § 75.340(a), except those pumps listed in § 75.340 (b)(2) through (b)(6), and areas where compressors subject to § 75.344 are installed if the electrical installation or compressor is or will be energized during the shift.

(10) Other areas where work or travel during the oncoming shift is scheduled prior to the beginning of the preshift examination.

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(11) Preshift examinations shall include examinations to identify violations of the standards listed below:

(i) §§ 75.202(a) and 75.220(a)(1)—roof control;

(ii) §§ 75.333(h) and 75.370(a)(1)—ventilation, methane;

(iii) §§ 75.400 and 75.403—accumulations of combustible materials and application of rock dust;

(iv) § 75.1403—other safeguards, limited to maintenance of travelways along belt conveyors, off track haulage roadways, and track haulage, track switches, and other components for haulage;

(v) § 75.1722(a)—guarding moving machine parts; and

(vi) § 75.1731(a)—maintenance of belt conveyor components.

(c) The person conducting the preshift examination shall determine the volume of air entering each of the following areas if anyone is scheduled to work in the areas during the oncoming shift:

(1) In the last open crosscut of each set of entries or rooms on each working section and areas where mechanized mining equipment is being installed or removed. The last open crosscut is the crosscut in the line of pillars containing the permanent stoppings that separate the intake air courses and the return air courses.

(2) On each longwall or shortwall in the intake entry or entries at the intake end of the longwall or shortwall face immediately outby the face and the velocity of air at each end of the face at the locations specified in the approved ventilation plan.

(3) At the intake end of any pillar line—

(i) If a single split of air is used, in the intake entry furthest from the return air course, immediately outby the first open crosscut outby the line of pillars being mined; or

(ii) If a split system is used, in the intake entries of each split immediately inby the split point.

(d) The person conducting the preshift examination shall check the refuge alternative for damage, the integrity of the tamper-evident seal and the mechanisms required to deploy the refuge alternative, and the ready availability of compressed oxygen and air.

(e) The district manager may require the operator to examine other areas of the mine or examine for other hazards and violations of other mandatory health or safety standards found during the preshift examination.

(f) *Certification.* At each working place examined, the person doing the preshift examination shall certify by initials, date, and the time, that the examination was made. In areas required to be examined outby a working section, the certified person shall certify by initials, date, and the time at enough locations to show that the entire area has been examined.

(g) *Recordkeeping.* A record of the results of each preshift examination, including a record of hazardous conditions and violations of the nine mandatory health or safety standards and their locations found by the examiner during each examination, and of the results and locations of air and methane measurements, shall be made on the surface before any persons, other than certified persons conducting examinations required by this subpart, enter any underground area of the mine. The results of methane tests shall be recorded as the percentage of methane measured by the examiner. The record shall be made by the certified person who made the examination or by a person designated by the operator. If the record is made by someone other than the examiner, the examiner shall verify the record by initials and date by or at the end of the shift for which the examination was made. A record shall also be made by a certified person of the action taken to correct hazardous conditions and violations of mandatory health or safety standards found during the preshift examination. All preshift and corrective action records shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The records required by this section shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(h) *Retention period.* Records shall be retained at a surface location at the

mine for at least 1 year and shall be made available for inspection by authorized representatives of the Secretary and the representative of miners.

[61 FR 9829, Mar. 11, 1996, as amended at 61 FR 55527, Oct. 25, 1996; 62 FR 35085, June 30, 1997; 64 FR 45170, Aug. 19, 1999; 73 FR 80697, Dec. 31, 2008; 77 FR 20714, Apr. 6, 2012]

§ 75.361 Supplemental examination.

(a)(1) Except for certified persons conducting examinations required by this subpart, within 3 hours before anyone enters an area in which a preshift examination has not been made for that shift, a certified person shall examine the area for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (a)(2) of this section, determine whether the air is traveling in its proper direction and at its normal volume, and test for methane and oxygen deficiency.

(2) Supplemental examinations shall include examinations to identify violations of the standards listed below:

(i) §§ 75.202(a) and 75.220(a)(1)—roof control;

(ii) §§ 75.333(h) and 75.370(a)(1)—ventilation, methane;

(iii) §§ 75.400 and 75.403—accumulations of combustible materials and application of rock dust;

(iv) § 75.1403—other safeguards, limited to maintenance of travelways along belt conveyors, off track haulage roadways, and track haulage, track switches, and other components for haulage;

(v) § 75.1722(a)—guarding moving machine parts; and

(vi) § 75.1731(a)—maintenance of belt conveyor components.

(b) *Certification.* At each working place examined, the person making the supplemental examination shall certify by initials, date, and the time, that the examination was made. In areas required to be examined outby a working section, the certified person shall certify by initials, date, and the time at enough locations to show that the entire area has been examined.

[61 FR 9829, Mar. 11, 1996, as amended at 77 FR 20714, 2012]

§ 75.362 On-shift examination.

(a)(1) At least once during each shift, or more often if necessary for safety, a certified person designated by the operator shall conduct an on-shift examination of each section where anyone is assigned to work during the shift and any area where mechanized mining equipment is being installed or removed during the shift. The certified person shall check for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (a)(3) of this section, test for methane and oxygen deficiency, and determine if the air is moving in its proper direction.

(2) A person designated by the operator shall conduct an examination and record the results and the corrective actions taken to assure compliance with the respirable dust control parameters specified in the approved mine ventilation plan. In those instances when a shift change is accomplished without an interruption in production on a section, the examination shall be made anytime within 1 hour after the shift change. In those instances when there is an interruption in production during the shift change, the examination shall be made before production begins on a section. Deficiencies in dust controls shall be corrected before production begins or resumes. The examination shall include: Air quantities and velocities; water pressures and flow rates; excessive leakage in the water delivery system; water spray numbers and orientations; section ventilation and control device placement; roof bolting machine dust collector vacuum levels; scrubber air flow rate; work practices required by the ventilation plan; and any other dust suppression measures. Measurements of the air velocity and quantity, water pressure and flow rates are not required if continuous monitoring of these controls is used and indicates that the dust controls are functioning properly.

(3) On-shift examinations shall include examinations to identify violations of the standards listed below:

(i) §§ 75.202(a) and 75.220(a)(1)—roof control;

(ii) §§ 75.333(h) and 75.370(a)(1)—ventilation, methane;

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(iii) §§75.400 and 75.403—accumulations of combustible materials and application of rock dust;

(iv) §75.1403—other safeguards, limited to maintenance of travelways along belt conveyors, off track haulage roadways, and track haulage, track switches, and other components for haulage;

(v) §75.1722(a)—guarding moving machine parts; and

(vi) §75.1731(a)—maintenance of belt conveyor components.

(b) During each shift that coal is produced, a certified person shall examine for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (a)(3) of this section along each belt conveyor haulageway where a belt conveyor is operated. This examination may be conducted at the same time as the preshift examination of belt conveyors and belt conveyor haulageways, if the examination is conducted within 3 hours before the oncoming shift.

(c) Persons conducting the on-shift examination shall determine at the following locations:

(1) The volume of air in the last open crosscut of each set of entries or rooms on each section and areas where mechanized mining equipment is being installed or removed. The last open crosscut is the crosscut in the line of pillars containing the permanent stoppings that separate the intake air courses and the return air courses.

(2) The volume of air on a longwall or shortwall, including areas where longwall or shortwall equipment is being installed or removed, in the intake entry or entries at the intake end of the longwall or shortwall.

(3) The velocity of air at each end of the longwall or shortwall face at the locations specified in the approved ventilation plan.

(4) The volume of air at the intake end of any pillar line—

(i) Where a single split of air is used in the intake entry furthest from the return air course immediately outby the first open crosscut outby the line of pillars being mined; or

(ii) Where a split system is used in the intake entries of each split immediately inby the split point.

(d) (1) A qualified person shall make tests for methane—

(i) At the start of each shift at each working place before electrically operated equipment is energized; and

(ii) Immediately before equipment is energized, taken into, or operated in a working place; and

(iii) At 20-minute intervals, or more often if required in the approved ventilation plan at specific locations, during the operation of equipment in the working place.

(2) Except as provided for in paragraph (d)(3) of this section, these methane tests shall be made at the face from under permanent roof support, using extendable probes or other acceptable means. When longwall or shortwall mining systems are used, these methane tests shall be made at the shearer, the plow, or the cutting head. When mining has been stopped for more than 20 minutes, methane tests shall be conducted prior to the start up of equipment.

(3) As an alternative method of compliance with paragraph (d)(2) of this section during roof bolting, methane tests may be made by sweeping an area not less than 16 feet inby the last area of permanently supported roof, using a probe or other acceptable means. This method of testing is conditioned on meeting the following requirements:

(i) The roof bolting machine must be equipped with an integral automated temporary roof support (ATRS) system that meets the requirements of 30 CFR 75.209.

(ii) The roof bolting machine must have a permanently mounted, MSHA-approved methane monitor which meets the maintenance and calibration requirements of 30 CFR 75.342(a)(4), the warning signal requirements of 30 CFR 75.342(b), and the automatic de-energization requirements of 30 CFR 75.342(c).

(iii) The methane monitor sensor must be mounted near the inby end and within 18 inches of the longitudinal center of the ATRS support, and positioned at least 12 inches from the roof when the ATRS is fully deployed.

(iv) Manual methane tests must be made at intervals not exceeding 20 minutes. The test may be made either from under permanent roof support or

from the roof bolter's work position protected by the deployed ATRS.

(v) Once a methane test is made at the face, all subsequent methane tests in the same area of unsupported roof must also be made at the face, from under permanent roof support, using extendable probes or other acceptable means at intervals not exceeding 20 minutes.

(vi) The district manager may require that the ventilation plan include the minimum air quantity and the position and placement of ventilation controls to be maintained during roof bolting.

(e) If auxiliary fans and tubing are used, they shall be inspected frequently.

(f) During each shift that coal is produced and at intervals not exceeding 4 hours, tests for methane shall be made by a certified person or by an atmospheric monitoring system (AMS) in each return split of air from each working section between the last working place, or longwall or shortwall face, ventilated by that split of air and the junction of the return air split with another air split, seal, or worked-out area. If auxiliary fans and tubing are used, the tests shall be made at a location outby the auxiliary fan discharge.

(g) *Certification.* (1) The person conducting the on-shift examination in belt haulage entries shall certify by initials, date, and time that the examination was made. The certified person shall certify by initials, date, and the time at enough locations to show that the entire area has been examined.

(2) The certified person directing the on-shift examination to assure compliance with the respirable dust control parameters specified in the approved mine ventilation plan shall:

(i) Certify by initials, date, and time on a board maintained at the section load-out or similar location showing that the examination was made prior to resuming production; and

(ii) Verify, by initials and date, the record of the results of the examination required under (a)(2) of this section to assure compliance with the respirable dust control parameters specified in the mine ventilation plan. The verification shall be made no later

than the end of the shift for which the examination was made.

(3) The mine foreman or equivalent mine official shall countersign each examination record required under (a)(2) of this section after it is verified by the certified person under (g)(2)(ii) of this section, and no later than the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The record shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(4) Records shall be retained at a surface location at the mine for at least 1 year and shall be made available for inspection by authorized representatives of the Secretary and the representative of miners.

[61 FR 9829, Mar. 11, 1996; 61 FR 26442, May 28, 1996, as amended at 68 FR 40138, July 7, 2003; 77 FR 20715, Apr. 6, 2012; 79 FR 24987, May 1, 2014]

§ 75.363 Hazardous conditions and violations of mandatory health or safety standards; posting, correcting, and recording.

(a) Any hazardous condition found by the mine foreman or equivalent mine official, assistant mine foreman or equivalent mine official, or other certified persons designated by the operator for the purposes of conducting examinations under this subpart D, shall be posted with a conspicuous danger sign where anyone entering the areas would pass. A hazardous condition shall be corrected immediately or the area shall remain posted until the hazardous condition is corrected. If the condition creates an imminent danger, everyone except those persons referred to in section 104(c) of the Act shall be withdrawn from the area affected to a safe area until the hazardous condition is corrected. Only persons designated by the operator to correct or evaluate the hazardous condition may enter the posted area. Any violation of a mandatory health or safety standard found during a preshift, supplemental, on-shift, or weekly examination shall be corrected.

(b) A record shall be made of any hazardous condition and any violation of the nine mandatory health or safety

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standards found by the mine examiner. This record shall be kept in a book maintained for this purpose on the surface at the mine. The record shall be made by the completion of the shift on which the hazardous condition or violation of the nine mandatory health or safety standards is found and shall include the nature and location of the hazardous condition or violation and the corrective action taken. This record shall not be required for shifts when no hazardous conditions or violations of the nine mandatory health or safety standards are found.

(c) The record shall be made by the certified person who conducted the examination or a person designated by the operator. If made by a person other than the certified person, the certified person shall verify the record by initials and date by or at the end of the shift for which the examination was made. Records shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The record shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(d) *Retention period.* Records shall be retained at a surface location at the mine for at least 1 year and shall be made available for inspection by authorized representatives of the Secretary and the representative of miners.

(e) *Review of citations and orders.* The mine operator shall review with mine examiners on a quarterly basis citations and orders issued in areas where preshift, supplemental, on-shift, and weekly examinations are required.

[61 FR 9829, Mar. 11, 1996; 61 FR 26442, May 28, 1996; 77 FR 20715, Apr. 6, 2012]

§ 75.364 Weekly examination.

(a) *Worked-out areas.* (1) At least every 7 days, a certified person shall examine unsealed worked-out areas where no pillars have been recovered by traveling to the area of deepest penetration; measuring methane and oxygen concentrations and air quantities and making tests to determine if the air is moving in the proper direction in

the area. The locations of measurement points where tests and measurements will be performed shall be included in the mine ventilation plan and shall be adequate in number and location to assure ventilation and air quality in the area. Air quantity measurements shall also be made where the air enters and leaves the worked-out area. An alternative method of evaluating the ventilation of the area may be approved in the ventilation plan.

(2) At least every 7 days, a certified person shall evaluate the effectiveness of bleeder systems required by § 75.334 as follows:

(i) Measurements of methane and oxygen concentrations and air quantity and a test to determine if the air is moving in its proper direction shall be made where air enters the worked-out area.

(ii) Measurements of methane and oxygen concentrations and air quantity and a test to determine if the air is moving in the proper direction shall be made immediately before the air enters a return split of air.

(iii) At least one entry of each set of bleeder entries used as part of a bleeder system under § 75.334 shall be traveled in its entirety. Measurements of methane and oxygen concentrations and air quantities and a test to determine if the air is moving in the proper direction shall be made at the measurement point locations specified in the mine ventilation plan to determine the effectiveness of the bleeder system.

(iv) In lieu of the requirements of paragraphs (a)(2)(i) and (iii) of this section, an alternative method of evaluation may be specified in the ventilation plan provided the alternative method results in proper evaluation of the effectiveness of the bleeder system.

(b) *Hazardous conditions and violations of mandatory health or safety standards.* At least every 7 days, an examination for hazardous conditions and violations of the mandatory health or safety standards referenced in paragraph (b)(8) of this section shall be made by a certified person designated by the operator at the following locations:

(1) In at least one entry of each intake air course, in its entirety, so that the entire air course is traveled.

(2) In at least one entry of each return air course, in its entirety, so that the entire air course is traveled.

(3) In each longwall or shortwall travelway in its entirety, so that the entire travelway is traveled.

(4) At each seal along return and bleeder air courses and at each seal along intake air courses not examined under § 75.360(b)(5).

(5) In each escapeway so that the entire escapeway is traveled.

(6) On each working section not examined under § 75.360(b)(3) during the previous 7 days.

(7) At each water pump not examined during a preshift examination conducted during the previous 7 days.

(8) Weekly examinations shall include examinations to identify violations of the standards listed below:

(i) §§ 75.202(a) and 75.220(a)(1)—roof control;

(ii) §§ 75.333(h) and 75.370(a)(1)—ventilation, methane;

(iii) §§ 75.400 and 75.403—accumulations of combustible materials and application of rock dust; and

(iv) § 75.1403—maintenance of off track haulage roadways, and track haulage, track switches, and other components for haulage;

(v) § 75.1722(a)—guarding moving machine parts; and

(vi) § 75.1731(a)—maintenance of belt conveyor components.

(c) *Measurements and tests.* At least every 7 days, a certified person shall—

(1) Determine the volume of air entering the main intakes and in each intake split;

(2) Determine the volume of air and test for methane in the last open crosscut in any pair or set of developing entries or rooms, in the return of each split of air immediately before it enters the main returns, and where the air leaves the main returns; and

(3) Test for methane in the return entry nearest each set of seals immediately after the air passes the seals.

(d) Hazardous conditions shall be corrected immediately. If the condition creates an imminent danger, everyone except those persons referred to in section 104(c) of the Act shall be withdrawn from the area affected to a safe area until the hazardous condition is corrected. Any violation of the nine

mandatory health or safety standards found during a weekly examination shall be corrected.

(e) The weekly examination may be conducted at the same time as the preshift or on-shift examinations.

(f) (1) The weekly examination is not required during any 7 day period in which no one enters any underground area of the mine.

(2) Except for certified persons required to make examinations, no one shall enter any underground area of the mine if a weekly examination has not been completed within the previous 7 days.

(g) *Certification.* The person making the weekly examinations shall certify by initials, date, and the time that the examination was made. Certifications and times shall appear at enough locations to show that the entire area has been examined.

(h) *Recordkeeping.* At the completion of any shift during which a portion of a weekly examination is conducted, a record of the results of each weekly examination, including a record of hazardous conditions and violations of the nine mandatory health or safety standards found during each examination and their locations, the corrective action taken, and the results and location of air and methane measurements, shall be made. The results of methane tests shall be recorded as the percentage of methane measured by the examiner. The record shall be made by the person making the examination or a person designated by the operator. If made by a person other than the examiner, the examiner shall verify the record by initials and date by or at the end of the shift for which the examination was made. The record shall be countersigned by the mine foreman or equivalent mine official by the end of the mine foreman's or equivalent mine official's next regularly scheduled working shift. The records required by this section shall be made in a secure book that is not susceptible to alteration or electronically in a computer system so as to be secure and not susceptible to alteration.

(i) *Retention period.* Records shall be retained at a surface location at the mine for at least 1 year and shall be

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made available for inspection by authorized representatives of the Secretary and the representative of miners.

[61 FR 9829, Mar. 11, 1996, as amended at 77 FR 20715, Apr. 6, 2012]

§ 75.370 Mine ventilation plan; submission and approval.

(a)(1) The operator shall develop and follow a ventilation plan approved by the district manager. The plan shall be designed to control methane and respirable dust and shall be suitable to the conditions and mining system at the mine. The ventilation plan shall consist of two parts, the plan content as prescribed in § 75.371 and the ventilation map with information as prescribed in § 75.372. Only that portion of the map which contains information required under § 75.371 will be subject to approval by the district manager.

(2) The proposed ventilation plan and any revision to the plan shall be submitted in writing to the district manager. When revisions to a ventilation plan are proposed, only the revised pages, maps, or sketches of the plan need to be submitted. When required in writing by the district manager, the operator shall submit a fully revised plan by consolidating the plan and all revisions in an orderly manner and by deleting all outdated material.

(3) (i) The mine operator shall notify the representative of miners at least 5 days prior to submission of a mine ventilation plan and any revision to a mine ventilation plan. If requested, the mine operator shall provide a copy to the representative of miners at the time of notification. In the event of a situation requiring immediate action on a plan revision, notification of the revision shall be given, and if requested, a copy of the revision shall be provided, to the representative of miners by the operator at the time of submittal;

(ii) A copy of the proposed ventilation plan, and a copy of any proposed revision, submitted for approval shall be made available for inspection by the representative of miners; and

(iii) A copy of the proposed ventilation plan, and a copy of any proposed revision, submitted for approval shall be posted on the mine bulletin board at

the time of submittal. The proposed plan or proposed revision shall remain posted until it is approved, withdrawn or denied.

(b) Following receipt of the proposed plan or proposed revision, the representative of miners may submit timely comments to the district manager, in writing, for consideration during the review process. A copy of these comments shall also be provided to the operator by the district manager upon request.

(c) (1) The district manager will notify the operator in writing of the approval or denial of approval of a proposed ventilation plan or proposed revision. A copy of this notification will be sent to the representative of miners by the district manager.

(2) If the district manager denies approval of a proposed plan or revision, the deficiencies of the plan or revision shall be specified in writing and the operator will be provided an opportunity to discuss the deficiencies with the district manager.

(d) No proposed ventilation plan shall be implemented before it is approved by the district manager. Any intentional change to the ventilation system that alters the main air current or any split of the main air current in a manner that could materially affect the safety and health of the miners, or any change to the information required in § 75.371 shall be submitted to and approved by the district manager before implementation.

(e) Before implementing an approved ventilation plan or a revision to a ventilation plan, persons affected by the revision shall be instructed by the operator in its provisions.

(f) The approved ventilation plan and any revisions shall be—

(1) Provided upon request to the representative of miners by the operator following notification of approval;

(2) Made available for inspection by the representative of miners; and

(3) Posted on the mine bulletin board within 1 working day following notification of approval. The approved plan and revisions shall remain posted on the bulletin board for the period that they are in effect.

(g) The ventilation plan for each mine shall be reviewed every 6 months

by an authorized representative of the Secretary to assure that it is suitable to current conditions in the mine.

§ 75.371 Mine ventilation plan; contents.

The mine ventilation plan shall contain the information described below and any additional provisions required by the district manager:

(a) The mine name, company name, mine identification number, and the name of the individual submitting the plan information.

(b) Planned main mine fan stoppages, other than those scheduled for testing, maintenance or adjustment, including procedures to be followed during these stoppages and subsequent restarts (see § 75.311(a)) and the type of device to be used for monitoring main mine fan pressure, if other than a pressure recording device (see 75.310(a)(4)).

(c) Methods of protecting main mine fans and associated components from the forces of an underground explosion if a 15-foot offset from the nearest side of the mine opening is not provided (see § 75.310(a)(6)); and the methods of protecting main mine fans and intake air openings if combustible material will be within 100 feet of the area surrounding the fan or these openings (see § 75.311(f)).

(d) Persons that will be permitted to enter the mine, the work these persons will do while in the mine, and electric power circuits that will be energized when a back-up fan system is used that does not provide the ventilating quantity provided by the main mine fan (see § 75.311(c)).

(e) The locations and operating conditions of booster fans installed in anthracite mines (see § 75.302).

(f) Section and face ventilation systems used and the minimum quantity of air that will be delivered to the working section for each mechanized mining unit, including drawings illustrating how each system is used, and a description of each different dust suppression system used on equipment, identified by make and model, on each working section, including:

(1) The number, types, location, orientation, operating pressure, and flow rate of operating water sprays;

(2) The maximum distance that ventilation control devices will be installed from each working face when mining or installing roof bolts in entries and crosscuts;

(3) Procedures for maintaining the roof bolting machine dust collection system in approved condition; and

(4) Recommended best work practices for equipment operators to minimize dust exposure.

(g) Locations where the air quantities must be greater than 3,000 cubic feet per minute (see § 75.325(a)(1)).

(h) In anthracite mines, locations where the air quantities must be greater than 1,500 cubic feet per minute (see § 75.325(e)(1)).

(i) Working places and working faces other than those where coal is being cut, mined, drilled for blasting or loaded, where a minimum air quantity will be maintained, and the air quantity at those locations (see § 75.325(a)(1)).

(j) The operating volume of machine mounted dust collectors or diffuser fans, if used (see § 75.325(a)(3)), including the type and size of dust collector screen used, and a description of the procedures to maintain dust collectors used on equipment.

(k) The minimum mean entry air velocity in exhausting face ventilation systems where coal is being cut, mined, drilled for blasting, or loaded, if the velocity will be less than 60 feet per minute. Other working places where coal is not being cut, mined, drilled for blasting or loaded, where at least 60 feet per minute or some other minimum mean entry air velocity will be maintained (see § 75.326).

(l) The maximum distance if greater than 10 feet from each working face at which face ventilation control devices will be installed (see § 75.330(b)(2)). The working places other than those where coal is being cut, mined, drilled for blasting or loaded, where face ventilation control devices will be used (see § 75.330(b)(1)(ii)).

(m) The volume of air required in the last open crosscut or the quantity of air reaching the pillar line if greater than 9,000 cubic feet per minute (see § 75.325(b)).

(n) In anthracite mines, the volume of air required in the last open crosscut

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or the quantity of air reaching the pillar line if greater than 5,000 cubic feet per minute (see § 75.325(e)(2)).

(o) Locations where separations of intake and return air courses will be built and maintained to other than the third connecting crosscut outby each working face (see § 75.333(b)(1)).

(p) The volume of air required at the intake to the longwall sections, if different than 30,000 cubic feet per minute (see § 75.325(c)).

(q) The velocities of air on a longwall or shortwall face, and the locations where the velocities must be measured (see § 75.325(c)(2)).

(r) The minimum quantity of air that will be provided during the installation and removal of mechanized mining equipment, the location where this quantity will be provided, and the ventilation controls that will be used (see § 75.325(d), (g), and (i)).

(s) The locations and frequency of the methane tests if required more often by § 75.362(d)(1)(iii) (see § 75.362(d)(1)(iii)).

(t) The locations where samples for "designated areas" will be collected, including the specific location of each sampling device, and the respirable dust control measures used at the dust generating sources for these locations (see §§ 70.207 and 70.209 of this chapter).

(u) The methane and dust control systems at underground dumps, crushers, transfer points, and haulageways.

(v) Areas in trolley haulage entries where the air velocity will be greater than 250 feet per minute and the velocity in these areas (see § 75.327(b)).

(w) Locations where entries will be advanced less than 20 feet from the inby rib without a crosscut being provided where a line brattice will be required. (see § 75.333(g)).

(x) A description of the bleeder system to be used, including its design (see § 75.334).

(y) The means for determining the effectiveness of bleeder systems (see § 75.334(c)(2)).

(z) The locations where measurements of methane and oxygen concentrations and air quantities and tests to determine whether the air is moving in the proper direction will be made to evaluate the ventilation of

nonpillared worked-out areas (see § 75.364 (a)(1)) and the effectiveness of bleeder systems (see § 75.364 (a)(2)(iii)). Alternative methods of evaluation of the effectiveness of bleeder systems (§ 75.364 (a)(2)(iv)).

(aa) The means for adequately maintaining bleeder entries free of obstructions such as roof falls and standing water (see § 75.334(c)(3)).

(bb) The location of ventilation devices such as regulators, stoppings and bleeder connectors used to control air movement through worked-out areas (see § 75.334(c)(4)). The location and sequence of construction of proposed seals for each worked-out area. (see § 75.334(e)).

(cc) In mines with a demonstrated history of spontaneous combustion: a description of the measures that will be used to detect methane, carbon monoxide, and oxygen concentration during and after pillar recovery and in worked-out areas where no pillars have been recovered (see § 75.334(f)(1); and, the actions which will be taken to protect miners from the hazards associated with spontaneous combustion (see § 75.334(f)(2)). If a bleeder system will not be used, the methods that will be used to control spontaneous combustion, accumulations of methane-air mixtures, and other gases, dusts, and fumes in the worked-out area (see § 75.334(f)(3)).

(dd) The location of all horizontal degasification holes that are longer than 1,000 feet and the location of all vertical degasification holes.

(ee) If methane drainage systems are used, a detailed sketch of each system, including a description of safety precautions used with the systems.

(ff) Seal installation requirements provided by § 75.335 and the sampling provisions provided by § 75.336.

(gg) The alternative location for the additional sensing device if the device will not be installed on the longwall shearing machine (see § 75.342(a)(2)).

(hh) The ambient level in parts per million of carbon monoxide, and the method for determining the ambient level, in all areas where carbon monoxide sensors are installed.

(ii) The locations (designated areas) where dust measurements would be made in the belt entry when belt air is

used to ventilate working sections or areas where mechanized mining equipment is being installed or removed, in accordance with §75.350(b)(3).

(jj) The locations and approved velocities at those locations where air velocities in the belt entry are above or below the limits set forth in §75.350(a)(2) or §§75.350(b)(7) and 75.350(b)(8).

(kk) The locations where air quantities are measured as set forth in §75.350(b)(6).

(ll) The locations and use of point-feed regulators, in accordance with §§75.350(c) and 75.350(d)(5).

(mm) The location of any diesel-discriminating sensor, and additional carbon monoxide or smoke sensors installed in the belt air course.

(nn) The length of the time delay or any other method used to reduce the number of non-fire related alert and alarm signals from carbon monoxide sensors.

(oo) The reduced alert and alarm settings for carbon monoxide sensors, in accordance with §75.351(i)(2).

(pp) The alternate detector and the alert and alarm levels associated with the detector, in accordance with §75.352(e)(7).

(qq) The distance that separation between the primary escapeway and the belt or track haulage entries will be maintained if other than to the first connecting crosscut outby the section loading point (see §75.380(g)).

(rr) In anthracite mines, the dimensions of escapeways where the pitch of the coal seam does not permit escapeways to be maintained 4 feet by 5 feet and the locations where these dimensions must be maintained (see §75.381(c)(4)).

(ss) Areas designated by the district manager where measurements of CO and NO₂ concentrations will be made (see §70.1900(a)(4)).

(tt) Location where the air quantity will be maintained at the section loading point (see §75.325(f)(2)).

(uu) Any additional location(s) required by the district manager where a minimum air quantity must be maintained for an individual unit of diesel-powered equipment. (see §75.325(f)(5)).

(vv) The minimum air quantities that will be provided where multiple

units of diesel-powered equipment are operated (see §75.325(g) (1)–(3) and (i)).

(ww) The diesel-powered mining equipment excluded from the calculation under §75.325(g). (see §75.325(h)).

(xx) Action levels higher than the 50 percent level specified by §70.1900(c). (see §75.325(j)).

(yy) The locations where the pressure differential cannot be maintained from the primary escapeway to the belt entry.

[61 FR 9829, Mar. 11, 1996, as amended at 61 FR 55527, Oct. 25, 1996; 69 FR 17529, Apr. 2, 2004; 72 FR 28817, May 22, 2007; 73 FR 21209, Apr. 18, 2008; 73 FR 80613, Dec. 31, 2008; 79 FR 24987, May 1, 2014]

§ 75.372 Mine ventilation map.

(a)(1) At intervals not exceeding 12 months, the operator shall submit to the district manager 3 copies of an up-to-date map of the mine drawn to a scale of not less than 100 nor more than 500 feet to the inch. A registered engineer or a registered surveyor shall certify that the map is accurate.

(2) In addition to the informational requirements of this section the map may also be used to depict and explain plan contents that are required in §75.371. Information shown on the map to satisfy the requirements of §75.371 shall be subject to approval by the district manager.

(b) The map shall contain the following information:

(1) The mine name, company name, mine identification number, a legend identifying the scale of the map and symbols used, and the name of the individual responsible for the information on the map.

(2) All areas of the mine, including sealed and unsealed worked-out areas.

(3) All known mine workings that are located in the same coalbed within 1,000 feet of existing or projected workings. These workings may be shown on a mine map with a scale other than that required by paragraph (a) of this section, if the scale does not exceed 2,000 feet to the inch and is specified on the map.

(4) The locations of all known mine workings underlying and overlying the mine property and the distance between the mine workings.

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(5) The locations of all known oil and gas wells and all known drill holes that penetrate the coalbed being mined.

(6) The locations of all main mine fans, installed backup fans and motors, and each fan's specifications, including size, type, model number, manufacturer, operating pressure, motor horsepower, and revolutions per minute.

(7) The locations of all surface mine openings and the direction and quantity of air at each opening.

(8) The elevation at the top and bottom of each shaft and slope, and shaft and slope dimensions, including depth and length.

(9) The direction of air flow in all underground areas of the mine.

(10) The locations of all active working sections and the four-digit identification number for each mechanized mining unit (MMU).

(11) The location of all escapeways and refuge alternatives.

(12) The locations of all ventilation controls, including permanent stoppings, overcasts, undercasts, regulators, seals, airlock doors, haulage door and other doors, except temporary ventilation controls on working sections.

(13) The direction and quantity of air—

- (i) Entering and leaving each split;
- (ii) In the last open crosscut of each set of entries and rooms; and
- (iii) At the intake end of each pillar line, including any longwall or shortwall.

(14) Projections for at least 12 months of anticipated mine development, proposed ventilation controls, proposed bleeder systems, and the anticipated location of intake and return air courses, belt entries, and escapeways.

(15) The locations of existing methane drainage systems.

(16) The locations and type of all AMS sensors required by subpart D of this part.

(17) Contour lines that pass through whole number elevations of the coalbed being mined. These lines shall be spaced at 10-foot elevation levels unless a wider spacing is permitted by the district manager.

(18) The location of proposed seals for each worked-out area.

(19) The entry height, velocity and direction of the air current at or near the midpoint of each belt flight where the height and width of the entry are representative of the belt haulage entry.

(20) The location and designation of air courses that have been redesignated from intake to return for the purpose of ventilation of structures, areas or installations that are required by this subpart D to be ventilated to return air courses, and for ventilation of seals.

(c) The mine map required by § 75.1200 may be used to satisfy the requirements for the ventilation map, provided that all the information required by this section is contained on the map.

[61 FR 9829, Mar. 11, 1996, as amended at 69 FR 17530, Apr. 2, 2004; 73 FR 80697, Dec. 31, 2008]

§ 75.373 Reopening mines.

After a mine is abandoned or declared inactive, and before it is reopened, mining operations shall not begin until MSHA has been notified and has completed an inspection.

§ 75.380 Escapeways; bituminous and lignite mines.

(a) Except in situations addressed in § 75.381, § 75.385 and § 75.386, at least two separate and distinct travelable passageways shall be designated as escapeways and shall meet the requirements of this section.

(b) (1) Escapeways shall be provided from each working section, and each area where mechanized mining equipment is being installed or removed, continuous to the surface escape drift opening or continuous to the escape shaft or slope facilities to the surface.

(2) During equipment installation, these escapeways shall begin at the projected location for the section loading point. During equipment removal, they shall begin at the location of the last loading point.

(c) The two separate and distinct escapeways required by this section shall not end at a common shaft, slope, or drift opening, except that multiple compartment shafts or slopes separated by walls constructed of non-combustible material may be used as separate and distinct passageways.

(d) Each escapeway shall be—

(1) Maintained in a safe condition to always assure passage of anyone, including disabled persons;

(2) Clearly marked to show the route and direction of travel to the surface;

(3) Maintained to at least a height of 5 feet from the mine floor to the mine roof, excluding the thickness of any roof support, except that the escapeways shall be maintained to at least the height of the coalbed, excluding the thickness of any roof support, where the coalbed is less than 5 feet. In areas of mines where escapeways pass through doors, the height may be less than 5 feet, provided that sufficient height is maintained to enable miners, including disabled persons, to escape quickly in an emergency. In areas of mines developed before November 16, 1992, where escapeways pass over or under overcasts or undercasts, the height may be less than 5 feet provided that sufficient height is maintained to enable miners, including disabled persons, to escape quickly in an emergency. When there is a need to determine whether sufficient height is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher;

(4) Maintained at least 6 feet wide except—

(i) Where necessary supplemental roof support is installed, the escapeway shall not be less than 4 feet wide; or

(ii) Where the route of travel passes through doors or other permanent ventilation controls, the escapeway shall be at least 4 feet wide to enable miners to escape quickly in an emergency, or

(iii) Where the alternate escapeway passes through doors or other permanent ventilation controls or where supplemental roof support is required and sufficient width is maintained to enable miners, including disabled persons, to escape quickly in an emergency. When there is a need to determine whether sufficient width is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher, or

(iv) Where mobile equipment near working sections, and other equipment essential to the ongoing operation of

longwall sections, is necessary during normal mining operations, such as material cars containing rock dust or roof control supplies, or is to be used for the evacuation of miners off the section in the event of an emergency. In any instance, escapeways shall be of sufficient width to enable miners, including disabled persons, to escape quickly in an emergency. When there is a need to determine whether sufficient width is provided, MSHA may require a stretcher test where 4 persons carry a miner through the area in question on a stretcher;

(5) Located to follow the most direct, safe and practical route to the nearest mine opening suitable for the safe evacuation of miners; and

(6) Provided with ladders, stairways, ramps, or similar facilities where the escapeways cross over obstructions.

(7) Provided with a continuous, durable directional lifeline or equivalent device that shall be—

(i) Installed and maintained throughout the entire length of each escapeway as defined in paragraph (b)(1) of this section;

(ii) Flame-resistant in accordance with the requirements of part 18 of this chapter upon replacement of existing lifelines; but in no case later than June 15, 2009;

(iii) Marked with a reflective material every 25 feet;

(iv) Located in such a manner for miners to use effectively to escape;

(v) Equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. Cones shall be installed so that the tapered section points inby;

(vi) Equipped with one sphere securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts;

(vii) Equipped with two securely attached cones, installed consecutively with the tapered section pointing inby, to signify an attached branch line is immediately ahead.

(A) A branch line leading from the lifeline to an SCSR cache will be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline.

(B) A branch line leading from the lifeline to a refuge alternative will be marked with a rigid spiraled coil at

least eight inches in length. The spiraled coil must be placed within reach of the lifeline (see Illustration 1 below).

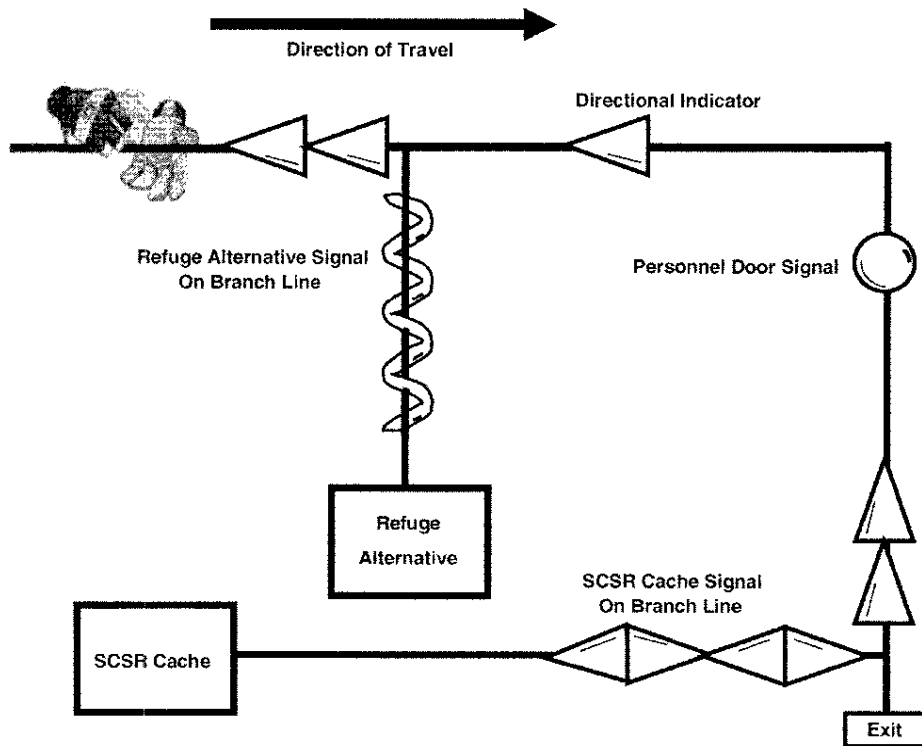


Illustration 1

(e) Surface openings shall be adequately protected to prevent surface fires, fumes, smoke, and flood water from entering the mine.

(f) *Primary escapeway.* (1) One escapeway that is ventilated with intake air shall be designated as the primary escapeway. The primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which is approved by the district manager.

(2) Paragraphs (f)(3) through (f)(7) of this section apply as follows:

(i) To all areas of a primary escapeway developed on or after November 16, 1992;

(ii) Effective as of June 10, 1997, to all areas of a primary escapeway developed between March 30, 1970 and November 16, 1992; and

(iii) Effective as of June 10, 1997, to all areas of the primary escapeway developed prior to March 30, 1970 where separation of the belt and trolley haulage entries from the primary escapeway existed prior to November 16, 1992.

(3) The following equipment is not permitted in the primary escapeway:

(i) Mobile equipment hauling coal except for hauling coal incidental to

cleanup or maintenance of the primary escapeway.

(ii) Compressors, except—

(A) Compressors necessary to maintain the escapeway in safe, travelable condition;

(B) Compressors that are components of equipment such as locomotives and rock dusting machines; and

(C) Compressors of less than five horsepower.

(iii) Underground transformer stations, battery charging stations, substations, and rectifiers except—

(A) Where necessary to maintain the escapeway in safe, travelable condition; and

(B) Battery charging stations and rectifiers and power centers with transformers that are either dry-type or contain nonflammable liquid, provided they are located on or near a working section and are moved as the section advances or retreats.

(iv) Water pumps, except—

(A) Water pumps necessary to maintain the escapeway in safe, travelable condition;

(B) Submersible pumps;

(C) Permissible pumps and associated permissible switchgear;

(D) Pumps located on or near a working section that are moved as the section advances or retreats;

(E) Pumps installed in anthracite mines; and

(F) Small portable pumps.

(4) Mobile equipment operated in the primary escapeway, except for continuous miners and as provided in paragraphs (f)(5), (f)(6), and (f)(7) of this section, shall be equipped with a fire suppression system installed according to §§ 75.1107-3 through 75.1107-16 that is—

(i) Manually operated and attended continuously by a person trained in the systems function and use, or

(ii) A multipurpose dry chemical type capable of both automatic and manual activation.

(5) Personnel carriers and small mobile equipment designed and used only for carrying people and small hand tools may be operated in primary escapeways if—

(i) The equipment is provided with a multipurpose dry chemical type fire suppression system capable of both automatic and manual activation, and

the suppression system is suitable for the intended application and is listed or approved by a nationally recognized independent testing laboratory, or,

(ii) Battery powered and provided with two 10 pound multipurpose dry chemical portable fire extinguishers.

(6) Notwithstanding the requirements of paragraph (f)(3)(i), mobile equipment not provided with a fire suppression system may operate in the primary escapeway if no one is in by except those persons directly engaged in using or moving the equipment.

(7) Notwithstanding the requirements of paragraph (f)(3)(i), mobile equipment designated and used only as emergency vehicles or ambulances, may be operated in the primary escapeway without fire suppression systems.

(g) Except where separation of belt and trolley haulage entries from designated escapeways did not exist before November 15, 1992, and except as provided in § 75.350(c), the primary escapeway must be separated from belt and trolley haulage entries for its entire length, to and including the first connecting crosscut outby each loading point except when a greater or lesser distance for this separation is specified and approved in the mine ventilation plan and does not pose a hazard to miners.

(h) *Alternate escapeway.* One escapeway shall be designated as the alternate escapeway. The alternate escapeway shall be separated from the primary escapeway for its entire length, except that the alternate and primary escapeways may be ventilated from a common intake air shaft or slope opening.

(i) Mechanical escape facilities shall be provided and maintained for—

(1) Each shaft that is part of a designated escapeway and is greater than 50 feet in depth; and

(2) Each slope from the coal seam to the surface that is part of a designated escapeway and is inclined more than 9 degrees from the horizontal.

(j) Within 30 minutes after mine personnel on the surface have been notified of an emergency requiring evacuation, mechanical escape facilities provided under paragraph (i) of this section shall be operational at the bottom

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of shaft and slope openings that are part of escapeways.

(k) Except where automatically activated hoisting equipment is used, the bottom of each shaft or slope opening that is part of a designated escapeway shall be equipped with a means of signaling a surface location where a person is always on duty when anyone is underground. When the signal is activated or the evacuation of persons underground is necessary, the person shall assure that mechanical escape facilities are operational as required by paragraph (j) of this section.

(1)(1) Stairways or mechanical escape facilities shall be installed in shafts that are part of the designated escapeways and that are 50 feet or less in depth, except ladders may be used in shafts that are part of the designated escapeways and that are 5 feet or less in depth.

(2) Stairways shall be constructed of concrete or metal, set on an angle not to exceed 45 degrees from the horizontal, and equipped on the open side with handrails. In addition, landing platforms that are at least 2 feet by 4 feet shall be installed at intervals not to exceed 20 vertical feet on the stairways and equipped on the open side with handrails.

(3) Ladders shall be constructed of metal, anchored securely, and set on an angle not to exceed 60 degrees from the horizontal.

(m) A travelway designed to prevent slippage shall be provided in slope and drift openings that are part of designated escapeways, unless mechanical escape facilities are installed.

[61 FR 9829, Mar. 11, 1996; 61 FR 20877, May 8, 1996, as amended at 61 FR 55527, Oct. 25, 1996; 69 FR 17530, Apr. 2, 2004; 71 FR 12269, Mar. 9, 2006; 71 FR 71452, Dec. 8, 2006; 73 FR 80613, Dec. 31, 2008]

§ 75.381 Escapeways; anthracite mines.

(a) Except as provided in §§ 75.385 and 75.386, at least two separate and distinct travelable passageways shall be designated as escapeways and shall meet the requirements of this section.

(b) Escapeways shall be provided from each working section continuous to the surface.

(c) Each escapeway shall be—

(1) Maintained in a safe condition to always assure passage of anyone, including disabled persons;

(2) Clearly marked to show the route of travel to the surface;

(3) Provided with ladders, stairways, ramps, or similar facilities where the escapeways cross over obstructions; and

(4) Maintained at least 4 feet wide by 5 feet high. If the pitch or thickness of the coal seam does not permit these dimensions to be maintained other dimensions may be approved in the ventilation plan.

(5) Provided with a continuous, durable directional lifeline or equivalent device that shall be—

(i) Installed and maintained throughout the entire length of each escapeway as defined in paragraph (b) of this section;

(ii) Flame-resistant in accordance with the requirements of part 18 of this chapter upon replacement of existing lifelines; but in no case later than June 15, 2009;

(iii) Marked with a reflective material every 25 feet;

(iv) Located in such a manner for miners to use effectively to escape;

(v) Equipped with one directional indicator cone securely attached to the lifeline, signifying the route of escape, placed at intervals not exceeding 100 feet. Cones shall be installed so that the tapered section points inby;

(vi) Equipped with one sphere securely attached to the lifeline at each intersection where personnel doors are installed in adjacent crosscuts;

(vii) Equipped with two securely attached cones, installed consecutively with the tapered section pointing inby, to signify an attached branch line is immediately ahead.

(A) A branch line leading from the lifeline to an SCSR cache will be marked with four cones with the base sections in contact to form two diamond shapes. The cones must be placed within reach of the lifeline.

(B) A branch line leading from the lifeline to a refuge alternative will be marked with a rigid spiraled coil at least eight inches in length. The spiraled coil must be placed within reach of the lifeline.

(d) Surface openings shall be adequately protected to prevent surface fires, fumes, smoke, and flood water from entering the mine.

(e) *Primary escapeway.* One escapeway that shall be ventilated with intake air shall be designated as the primary escapeway. The primary escapeway shall have a higher ventilation pressure than the belt entry unless the mine operator submits an alternative in the mine ventilation plan to protect the integrity of the primary escapeway, based on mine specific conditions, which is approved by the district manager.

(f) *Alternate escapeway.* One escapeway that shall be designated as the alternate escapeway shall be separated from the primary escapeway for its entire length.

(g) Mechanical escape facilities shall be provided—

(1) For each shaft or slope opening that is part of a primary escapeway; and

(2) For slopes that are part of escapeways, unless ladders are installed.

(h) Within 30 minutes after mine personnel on the surface have been notified of an emergency requiring evacuation, mechanical escape facilities shall be operational at the bottom of each shaft and slope opening that is part of an escapeway.

(i) Except where automatically activated hoisting equipment is used, the bottom of each shaft or slope opening that is part of a primary escapeway shall be equipped with a means of signaling a surface location where a person is always on duty when anyone is underground. When the signal is activated or the evacuation of personnel is necessary, the person on duty shall assure that mechanical escape facilities are operational as required by paragraph (h) of this section.

[61 FR 9829, Mar. 11, 1996, as amended at 71 FR 12269, Mar. 9, 2006; 71 FR 71452, Dec. 8, 2006; 73 FR 80614, Dec. 31, 2008]

§ 75.382 Mechanical escape facilities.

(a) Mechanical escape facilities shall be provided with overspeed, overwind, and automatic stop controls.

(b) Every mechanical escape facility with a platform, cage, or other device

shall be equipped with brakes that can stop the fully loaded platform, cage, or other device.

(c) Mechanical escape facilities, including automatic elevators, shall be examined weekly. The weekly examination of this equipment may be conducted at the same time as a daily examination required by § 75.1400-3.

(1) The weekly examination shall include an examination of the headgear, connections, links and chains, overspeed and overwind controls, automatic stop controls, and other facilities.

(2) At least once each week, the hoist shall be run through one complete cycle of operation to determine that it is operating properly.

(d) A person trained to operate the mechanical escape facility always shall be available while anyone is underground to provide the mechanical escape facilities, if required, to the bottom of each shaft and slope opening that is part of an escapeway within 30 minutes after personnel on the surface have been notified of an emergency requiring evacuation. However, no operator is required for automatically operated cages, platforms, or elevators.

(e) Mechanical escape facilities shall have rated capacities consistent with the loads handled.

(f) Manually-operated mechanical escape facilities shall be equipped with indicators that accurately and reliably show the position of the facility.

(g) *Certification.* The person making the examination as required by paragraph (c) of this section shall certify by initials, date, and the time that the examination was made. Certifications shall be made at or near the facility examined.

§ 75.384 Longwall and shortwall travelways.

(a) If longwall or shortwall mining systems are used and the two designated escapeways required by § 75.380 are located on the headgate side of the longwall or shortwall, a travelway shall be provided on the tailgate side of that longwall or shortwall. The travelway shall be located to follow the most direct and safe practical route to a designated escapeway.

§ 75.385

(b) The route of travel shall be clearly marked.

(c) When a roof fall or other blockage occurs that prevents travel in the travelway—

(1) Work shall cease on the longwall or shortwall face;

(2) Miners shall be withdrawn from face areas to a safe area outby the section loading point; and

(3) MSHA shall be notified.

(d) Work may resume on the longwall or shortwall face after the procedures set out in §§ 75.215 and 75.222 are implemented.

§ 75.385 Opening new mines.

When new mines are opened, no more than 20 miners at a time shall be allowed in any mine until a connection has been made between the mine openings, and these connections shall be made as soon as possible.

§ 75.386 Final mining of pillars.

When only one mine opening is available due to final mining of pillars, no more than 20 miners at a time shall be allowed in the mine, and the distance between the mine opening and working face shall not exceed 500 feet.

§ 75.388 Boreholes in advance of mining.

(a) Boreholes shall be drilled in each advancing working place when the working place approaches—

(1) To within 50 feet of any area located in the mine as shown by surveys that are certified by a registered engineer or registered surveyor unless the area has been preshift examined;

(2) To within 200 feet of any area located in the mine not shown by surveys that are certified by a registered engineer or registered surveyor unless the area has been preshift examined; or

(3) To within 200 feet of any mine workings of an adjacent mine located in the same coalbed unless the mine workings have been preshift examined.

(b) Boreholes shall be drilled as follows:

(1) Into the working face, parallel to the rib, and within 3 feet of each rib.

(2) Into the working face, parallel to the rib, and at intervals across the face not to exceed 8 feet.

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(3) At least 20 feet in depth in advance of the working face, and always maintained to a distance of 10 feet in advance of the working face.

(c) Boreholes shall be drilled in both ribs of advancing working places described in paragraph (a) of this section unless an alternative drilling plan is approved by the District Manager in accordance with paragraph (g) of this section. These boreholes shall be drilled—

(1) At an angle of 45 degrees to the direction of advance;

(2) At least 20 feet in depth; and

(3) At intervals not to exceed 8 feet.

(d) When a borehole penetrates an area that cannot be examined, and before mining continues, a certified person shall, if possible, determine—

(1) The direction of airflow in the borehole;

(2) The pressure differential between the penetrated area and the mine workings;

(3) The concentrations of methane, oxygen, carbon monoxide, and carbon dioxide; and

(4) Whether water is impounded within the penetrated area.

(e) Unless action is taken to dewater or to ventilate penetrated areas, boreholes shall be plugged with wooden plugs or similar devices when—

(1) Tests conducted at the boreholes show that the atmosphere in the penetrated area contains more than 1.0 percent methane, less than 19.5 percent oxygen, or harmful concentrations of carbon monoxide, carbon dioxide or other explosive, harmful or noxious gases;

(2) Tests for methane, oxygen, carbon monoxide, and carbon dioxide cannot be made because air from mine workings is flowing into the penetrated area; or

(3) Water is discharging through the boreholes from the penetrated area into the mine workings.

(f) If mining is to be conducted within 50 feet above or below an inaccessible area of another mine, boreholes shall be drilled, as necessary, according to a plan approved by the district manager.

(g) Alternative borehole patterns that provide the same protection to miners as the pattern established by

paragraphs (b) and (c) of this section may be used under a plan approved by the district manager.

§ 75.389 Mining into inaccessible areas.

(a) (1) The operator shall develop and follow a plan for mining into areas penetrated by boreholes drilled under § 75.388.

(2) Mining shall not resume into any area penetrated by boreholes until conditions in the penetrated area can be determined under § 75.388 and the plan for mining-through into the area has been approved by the district manager.

(3) A copy of the procedures to be followed shall be posted near the site of the mining-through operations and the operator shall explain these procedures to all miners involved in the operations.

(b) The procedures specified in the plan shall include—

(1) The method of ventilation, ventilation controls, and the air quantities and velocities in the affected working section and working place;

(2) Dewatering procedures to be used if a penetrated area contains a water accumulation; and

(3) The procedures and precautions to be followed during mining-through operations.

(c) Except for routine mining-through operations that are part of a retreat section ventilation system approved in accordance with § 75.371(f) and (x), the following provisions shall apply:

(1) Before and during mining-through operations, a certified person shall perform air quality tests at intervals and at locations necessary to protect the safety of the miners.

(2) During mining-through operations, only persons involved in these operations shall be permitted in the mine; and

(3) After mining-through, a certified person shall determine that the affected areas are safe before any persons enter the underground areas of the mine.

Subpart E—Combustible Materials and Rock Dusting

§ 75.400 Accumulation of combustible materials.

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

[61 FR 55527, Oct. 25, 1996]

§ 75.400-1 Definitions.

(a) The term *coal dust* means particles of coal that can pass a No. 20 sieve.

(b) The term *float coal dust* means the coal dust consisting of particles of coal that can pass a No. 200 sieve.

(c) The term *loose coal* means coal fragments larger in size than coal dust.

§ 75.400-2 Cleanup program.

A program for regular cleanup and removal of accumulations of coal and float coal dusts, loose coal, and other combustibles shall be established and maintained. Such program shall be available to the Secretary or authorized representative.

§ 75.401 Abatement of dust; water or water with a wetting agent.

[STATUTORY PROVISION]

Where underground mining operations in active workings create or raise excessive amounts of dust, water or water with a wetting agent added to it, or other no less effective methods approved by the Secretary or his authorized representative, shall be used to abate such dust. In working places, particularly in distances less than 40 feet from the face, water, with or without a wetting agent, or other no less effective methods approved by the Secretary or his authorized representative, shall be applied to coal dust on the ribs, roof, and floor to reduce dispersibility and to minimize the explosion hazard.

§ 75.401-1 Excessive amounts of dust.

The term "excessive amounts of dust" means coal and float coal dust in