

FEDERAL REGISTER
Vol. 73, No. 179
Rules and Regulations

DEPARTMENT OF LABOR (DOL)
Mine Safety and Health Administration (MSHA)

30 CFR Part 75

RIN 1219-AB40

Fire Extinguishers in Underground Coal Mines

73 FR 53124

DATE: Monday, September 15, 2008

ACTION: Final rule.

SUMMARY: The Mine Safety and Health Administration (MSHA) is revising the existing standard for the quantity and location of firefighting equipment in underground coal mines to assure that it is readily available to quickly extinguish a fire. In lieu of the existing requirements for rock dust and other firefighting equipment, this final rule allows the use of portable fire extinguishers in working sections of underground anthracite coal mines that have no electrical equipment at the working section and produce less than 300 tons of coal per shift. The rule also requires an additional fire extinguisher in lieu of rock dust at temporary electrical installations in all underground coal mines.

EFFECTIVE DATE: This rule is effective October 15, 2008.

SUPPLEMENTARY INFORMATION: The existing safety standards are designed to assure that firefighting equipment is readily available to quickly extinguish a fire and prevent its spread. Because of the explosive nature of coal dust and the possible presence of methane gas, there is great potential for a fire to spread to other areas of the underground coal mine. Historical records demonstrate that the consequences of a fire in an underground coal mine can be disastrous.

II. Background

The Bureau of Mines in the U.S. Department of the Interior (Bureau) promulgated and enforced fire protection standards under the Federal Coal Mine Safety Act (*30 U.S.C. 451-483*). These standards continued in effect under the Federal Coal Mine Health and Safety Act of 1969 (Coal Act) through a transfer provision in the law. On November 20, 1970 (*35 FR 17890*), the Bureau revised its standards addressing fire protection in underground coal mines. The revised standards continued in effect under the Federal Mine Safety and Health Act of 1977 (Mine Act) through a transfer provision in the Mine Act when the enforcement of mine safety and health was moved from the Department of the Interior to the Department of Labor. The standard addressed in this rule has not changed since that time.

MSHA published a proposed rule (*72 FR 72301*) on December 20, 2007, to allow the use of an additional fire extinguisher in lieu of rock dust in the working sections of underground anthracite mines. The proposal also would have required the use of an additional fire extinguisher in lieu of rock dust at temporary electrical installations in an underground coal mine. MSHA received no comments on the proposal and, therefore, is publishing the final rule without change.

A. Petition for Modification of a Mandatory Safety Standard

Section 101(c) of the Mine Act allows a mine operator or the representative of miners to petition MSHA for a modification of an existing safety standard. After investigating each petition, MSHA may grant a modification of a safety standard when MSHA determines that--

. The alternative method for achieving the desired result will at all times guarantee no less than the same measure of protection as the existing standard, or

. The application of the existing standard will result in a diminution of safety to miners at that mine.

Underground anthracite coal mine operators have filed petitions for modification to use portable fire extinguishers in lieu of rock dust and other firefighting equipment in the working sections of mines that produce less than 300 tons of coal per shift and use no electrical equipment at the face. Also, many underground coal mine operators have filed petitions for modification to use portable fire extinguishers in lieu of rock dust at temporary electrical installations. This final rule eliminates the need to file a petition to use only portable fire extinguishers at these locations.

B. Rock Dust for Fire Protection

Rock dust is an inorganic, non-combustible dust, such as crushed limestone, that the mine operator spreads on coal surfaces to reduce the chance of stirring up an explosive suspension of coal dust. The rock dust also can work as a fire suppressant by smothering the flame. It is widely used in coal mining to reduce the likelihood of coal dust explosions or flame propagation. A single bag of rock dust weighs about 40 pounds when dry. In damp environments, a bag of rock dust will absorb water, rendering it ineffective for fire prevention or suppression purposes. Damp rock dust becomes somewhat plastic in consistency and dries into a hard, brick-like mass. The presence of bags of rock dust can give a false sense of security for firefighting purposes because the rock dust can absorb water even through a sealed bag. The miner or mine operator can be unaware that the rock dust is useless as a fire suppressant until trying to use it. Bags of rock dust must be protected from moisture, checked frequently, and replaced if wet or hardened. This lifting and moving of heavy bags of rock dust increases the risk of injury to miners.

C. Requirements for Portable Fire Extinguishers

Existing § 75.1100-1(e) sets requirements for a portable fire extinguisher as follows:

(e) Portable fire extinguisher: A portable fire extinguisher shall be either (1) a multipurpose dry chemical type containing a nominal weight of 5 pounds of dry powder and enough expellant to apply the powder or (2) a foam-producing type containing at least 2 1/2 gallons of foam-producing liquids and enough expellant to supply the foam. Only fire extinguishers approved by the Underwriters Laboratories, Inc., or Factory Mutual Research Corp., carrying appropriate labels as to type and purpose, shall be used. After March 30, 1971, all new portable fire extinguishers acquired for use in a coal mine shall have a 2A 10 BC or higher rating.

III. Section-by-Section Analysis

Existing § 75.1100-2 sets requirements for the quantity and location of firefighting equipment in underground coal mines. At working sections, paragraph (a) requires 240 pounds of rock dust (about six bags), two portable fire extinguishers, and a ready supply of water or dry chemical. [*53125] At permanent electrical installations, paragraph (e)(1) requires two portable fire extinguishers or one having twice the minimum capacity specified for a portable fire extinguisher in existing § 75.1100-1(e). Rock dust is not required at permanent electrical installations. At temporary electrical installations, however, paragraph (e)(2) requires one portable fire extinguisher and 240 pounds of rock dust.

A. § 75.1100-2(a): Working Sections

Final paragraph § 75.1100-2(a)(3) allows underground anthracite coal mine operators the option to use portable fire extinguishers in lieu of required rock dust, water cars, and other firefighting equipment in working sections.

Existing § 75.1100-2(a) includes different requirements for readily available firefighting equipment in working sections based on the mine's production. Because anthracite coal mines typically produce only 10 to 20 tons of coal per shift, they are covered by existing § 75.1100-2(a)(2), which requires--

(2) Each working section of coal mines producing less than 300 tons of coal per shift shall be provided with two portable fire extinguishers, 240 pounds of rock dust in bags or other suitable containers, and at least 500 gallons of water and at least 3 pails of 10 quart capacity. In lieu of the 500 gallon water supply a waterline with sufficient hose to

reach the working places, a portable water car (500 gallons capacity) or a portable all-purpose dry powder chemical car of at least 125-pounds capacity may be provided.

These options, however, do not address or accommodate the typical conditions in the working sections of underground anthracite coal mines. This final rule adds new paragraph § 75.1100-2(a)(3) to provide an option for underground anthracite coal mines that have no electrical equipment at the working section and makes non-substantive format changes to § 75.1100-2(a)(2).

The final rule incorporates the alternative method from granted petitions for modification and further clarifies the mine operator's responsibility regarding the size of fire extinguishers required. The final rule does not apply to underground anthracite coal mines that use electrical equipment at the working section. MSHA believes that the final rule provides needed flexibility and does not reduce protection for miners.

1. Final § 75.1100-2(a)(3) for Underground Anthracite Coal Mines

Final paragraph § 75.1100-2(a)(3) allows underground anthracite operators the option to use portable fire extinguishers. Almost all of these mines still use mining methods to address their unique geological characteristics that were developed over 150 years ago. Anthracite coal is a hard coal found in undulating, steeply pitched veins, and mined with slow, non-mechanized mining methods. In contrast, bituminous coal is softer and generally found in horizontal veins. Bituminous coal production uses highly mechanized methods and depends on electricity for face equipment.

Anthracite mining uses methods and systems that rely on manual labor. Electricity that can cause or contribute to a fire hazard is usually non-existent near the face. Typically, anthracite coal mines operate face equipment using air driven motors for coal drills, air driven fans to supplement face ventilation, and air driven saws and hoists for the cutting and placement of timber.

Mining conditions in underground anthracite coal mines are generally wet and removal of water from the face areas is a major problem. The steep grade permits natural water drainage in open, on-grade ditches from the face area to a slope sump where it is stored and eventually pumped to a suitable water treatment area. Waterlines are seldom installed to the face.

Anthracite coal has a low volatile ratio and the dust does not propagate an explosion. Anthracite coal's ignition temperature is high (925 to 970 degrees Fahrenheit) compared to bituminous coal's ignition temperature (700 to 900 degrees Fahrenheit). Thus, anthracite coal dust is harder to ignite than bituminous coal dust and the risk of a fire is lower in anthracite coal mines than in bituminous coal mines. There has been only one reported fire underground in an anthracite coal mine since implementation of the Mine Act. This fire occurred at a mine that used electrical equipment at the face.

In summary, except for one, underground anthracite coal mines are steeply sloped with little space underground for storage of firefighting equipment; use hand-operated or mechanical equipment, rather than electrical equipment (a potential ignition source), underground at the face where coal is mined; and are wet, causing rock dust to become hard and ineffective for firefighting. Anthracite coal mine dust has low volatility, is difficult to ignite, and does not propagate an explosion.

2. Discussion of Alternative for Underground Anthracite Coal Mines

Because of the uniqueness of the mining methods and conditions in underground anthracite mines, anthracite mine operators have petitioned MSHA to allow the use of only portable fire extinguishers to replace existing requirements where rock dust, water cars, and other water storage are not practical. The mine operators asserted that the alternative method will at all times guarantee no less than the same measure of protection as that afforded by the standard. From 1994 through 2007, MSHA granted 35 petitions for modification of existing § 75.1100-2(a)(2) for underground anthracite coal mines that have no electrical equipment at the working section. MSHA granted the petitions for modification with the following conditions.

1. Fire extinguisher(s) having at least four times the minimum capacity specified for a portable fire extinguisher in 30 CFR 75.1100-1(e) shall be located no greater than 500 feet from the working face.

2. Fire extinguisher(s) having at least six times the minimum capacity specified for a portable fire extinguisher in 30 CFR 75.1100-1(e) shall be located at the entrance to the gangway at the bottom of the slope.

There were no significant adverse comments filed on these petitions. Based on MSHA's experience and investigation of these petitions for modification, MSHA concluded that the use of fire extinguishers in the situations addressed is a safe alternative to existing requirements. The granted alternative method provides for a quick response to any fire on the section and does not reduce protection for miners. In addition, because there are a variety of fire extinguishers currently available, MSHA anticipates no problems in obtaining fire extinguishers.

This final rule incorporates the language from these granted petitions for modification into final paragraph § 75.1100-2(a)(3). In the final rule, the Agency has clarified the mine operator's responsibility regarding the size of fire extinguishers required. The final rule does not apply to the few underground anthracite coal mines that use electrical equipment at the working section. This final rule does not reduce protection for miners.

B. Section 75.1100-2(e): Electrical Installations

Final § 75.1100-2(e) is substantively unchanged from the existing standard and the proposal. Like the proposal, the final rule clarifies the regulatory language and specifies the size and rating of fire extinguishers. The required rating was inadvertently omitted from the proposal, which resulted in the inclusion of foam extinguishers. Consistent with the existing standard and the Agency's intent, the final rule [*53126] requires that at each electrical installation, the operator must provide two portable fire extinguishers that have a 2-A:10-B:C or higher rating and a nominal capacity of 5 pounds of dry chemical, or one having at least 10 pounds of dry chemical.

This final rule revises existing § 75.1100-2(e) to eliminate the separate requirements for permanent and temporary electrical installations. It removes the requirement for rock dust at temporary underground electrical installations and requires two portable fire extinguishers, or one having twice the minimum capacity, at all electrical installations. MSHA believes that the final rule offers greater flexibility, provides no less protection to affected miners, and does not result in a diminution of safety to miners.

1. Characteristics of Underground Electrical Installations

The difference between permanent and temporary underground electrical installations can be negligible in regard to their potential fire hazard. For example, MSHA generally considers electrical installations located outby the working section to be permanent and those on the working section to be temporary. However, MSHA considers a battery charging station to be temporary because it moves, even though it is outby the working section. If the electrical installation is in a fire resistant enclosure, then MSHA considers it to be permanent. If not, MSHA considers it temporary. MSHA considers a power center supplying the belt line to be permanent, but one supplying a portable compressor to be temporary. Typically, temporary electrical installations are unattended pumping stations located in remote areas of the mine, battery charging stations, power installation transformers, and section power centers for operating electrical face equipment.

2. Elimination of Separate Requirements for Permanent and Temporary Electrical Installations

Underground coal mine operators petitioned MSHA for modification of § 75.1100-2(e)(2) to allow the use of only portable fire extinguishers at temporary electrical installations. The petitioners asserted that it is difficult to comply with the existing standard in wet and damp environments, such as pumping stations, because the rock dust becomes unusable for firefighting purposes. The petitioners asserted that the exclusive use of portable fire extinguishers as an alternative means of extinguishing fires is at least as effective as the existing standard. They also asserted that portable fire extinguishers may be a safer fire suppressant because lifting the heavy bags of rock dust increases the risk of injury.

From 1994 through 2007, MSHA granted about 42 petitions for modification of § 75.1100-2(e)(2). In granting these petitions, MSHA acknowledged the tendency of rock dust to harden over time and become brick-like when exposed to humidity, which greatly reduces the value of the rock dust as a firefighting tool. MSHA has no evidence of adverse outcomes associated with these granted petitions. Although MSHA did not receive any comments contesting the granted petitions, MSHA received a few comments on the petitions requesting that the Agency require a minimum of two fire

extinguishers as an alternative method. Two fire extinguishers may be preferable in some situations to allow two miners to fight the fire simultaneously or to provide a backup should one of the portable fire extinguishers fail.

IV. Executive Order 12866

Executive Order (E.O.) 12866 requires that regulatory agencies assess both the costs and benefits of a significant regulatory action. Under the Executive Order, a "significant regulatory action" is one meeting any of the following: Having an annual effect on the economy of \$100 million or more; creating a serious inconsistency or interfering with an action of another agency; materially altering the budgetary impact of entitlements or the rights of entitlement recipients; or raising novel legal or policy issues. MSHA has determined that this final rule will not have an annual effect of \$100 million or more on the economy and, therefore, it is not an economically "significant regulatory action" under section 3(f) of E.O. 12866. MSHA, however, has concluded that the final rule is otherwise significant under E.O. 12866 because it raises novel legal or policy issues.

A. Population-at-Risk

Based on the most recent MSHA data, this final rule applies to 624 underground coal mine operators employing 42,207 miners (excluding office workers). This data includes 16 underground anthracite coal mines of which 15, employing a total of 72 miners, use no electric equipment at the face.

B. Costs

This final rule potentially affects all coal mines that have temporary electrical installations underground and about 15 active underground anthracite coal mines. MSHA experience indicates that a 10- to 20-pound fire extinguisher is the industry standard. In addition, 14 of the 15 active underground anthracite coal mines with no electrical equipment at the face are operating under an alternative method that allows them to use portable fire extinguishers for firefighting. MSHA considers the maintenance of portable fire extinguishers to be a normal business practice for underground coal mines.

MSHA assumes that all mine operators have fire extinguishers meeting the requirements of the final rule and has estimated no cost for the final rule. MSHA estimates that, under the final rule, several mines will not need to file a petition for modification, resulting in a reduction of paperwork and associated costs. However, the Agency estimates that any reductions would be negligible.

C. Benefits

The final rule allows the use of portable fire extinguishers in certain locations in the mine without the need for a mine operator to file a petition for modification. A significant benefit is that rock dust, which is ineffective when damp, can be replaced by a portable fire extinguisher, which is an effective and reliable fire suppressant. In addition, portable fire extinguishers are easier to transport. A mine operator will usually be able to replace a fire extinguisher more quickly than 240 pounds of rock dust. MSHA also anticipates a decreased risk of injury related to lifting and moving heavy bags of rock dust. Based on MSHA injury data between January 1999 and September 2005, 120 injuries or about 17 per year occurred that involved lifting, carrying, or moving rock dust or bags of rock dust.

D. Feasibility

MSHA has concluded that the requirements of the final rule are both technologically and economically feasible. This final rule is technologically feasible because it is not technology-forcing and does not involve activities on the frontiers of scientific knowledge.

V. The Regulatory Flexibility Act (RFA) and the Small Business Regulatory Enforcement Fairness Act (SBREFA)

The Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the [*53127] agency certifies that the rule will not have a significant impact on a substantial number of small entities. MSHA analyzed the impact of this final rule. This analysis

complies with the legal requirements of the RFA for an analysis of the impacts on "small entities." MSHA certifies that the final rule does not have a significant economic impact on a substantial number of small entities.

Factual Basis for Certification

This final rule will provide at least the same level of protection for miners as the existing standard. It will result in a net cost savings and have no adverse economic impact on the underground coal mining industry.

VI. Paperwork Reduction Act of 1995

Due to this rulemaking, mine operators will no longer have to file a petition for modification of existing § 75.1100-2(a)(2) and (e)(2) to use only fire extinguishers for firefighting purposes. Existing Office of Management and Budget (OMB) paperwork package 1219-0065 includes the annual paperwork burden related to the preparation and filing of petitions with MSHA, including petitions for modification to use fire extinguishers. This final rule will reduce the annual paperwork burden in OMB paperwork package 1219-0065 and MSHA estimates that this reduction will be negligible.

VII. Other Regulatory Considerations

A. The Unfunded Mandates Reform Act of 1995 and Executive Order 12875: Enhancing the Intergovernmental Partnership (*58 FR 58093*)

This final rule does not include any Federal mandate that may result in increased expenditures by State, local, or tribal governments; does not increase private sector expenditures by more than \$100 million annually; and does not significantly or uniquely affect small governments. Accordingly, the Unfunded Mandates Reform Act (*2 U.S.C. 1501 et seq.*) requires no further agency action or analysis.

B. The Treasury and General Government Appropriations Act of 1999: Assessment of Federal Regulations and Policies on Families

This final rule does not have an affect on family well-being or stability, marital commitment, parental rights or authority, or income or poverty of families and children. Accordingly, section 654 of the Treasury and General Government Appropriations Act of 1999 (*5 U.S.C. 601 note*) requires no further agency action, analysis, or assessment.

C. Executive Order 12630: Government Actions and Interference with Constitutionally Protected Property Rights (*53 FR 8859*)

This final rule does not implement a policy with "takings" implications. Accordingly, Executive Order 12630 requires no further agency action or analysis.

D. Executive Order 12988: Civil Justice Reform (*61 FR 4729*)

This final rule was written to provide a clear legal standard for affected conduct and was carefully reviewed to eliminate drafting errors and ambiguities, so as to minimize litigation and undue burden on the federal court system. Accordingly, this final rule meets the applicable standards provided in section 3 of Executive Order 12988.

E. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks (*62 FR 19885*)

This final rule does not have an adverse impact on children. Accordingly, Executive Order 13045, as amended by Executive Orders 13229 and 13296, requires no further agency action or analysis.

F. Executive Order 13132: Federalism (*64 FR 43255*)

This final rule does not have "federalism implications" because it does not "have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and

responsibilities among the various levels of government." Accordingly, Executive Order 13132 requires no further agency action or analysis.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments (*63 FR 27655*)

This final rule does not have "tribal implications" because it does not "have substantial direct effects on one or more Indian tribes, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes." Accordingly, Executive Order 13175 requires no further agency action or analysis.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use (*66 FR 28355*)

This final rule is not a "significant energy action" because it is not "likely to have a significant adverse effect on the supply, distribution, or use of energy (including a shortfall in supply, price increases, and increased use of foreign supplies)." Accordingly, Executive Order 13211 requires no further agency action or analysis.

I. Executive Order 13272: Proper Consideration of Small Entities in Agency Rulemaking (*67 FR 53461*)

MSHA has thoroughly reviewed this final rule to assess and take appropriate account of its potential impact on small businesses, small governmental jurisdictions, and small organizations. As discussed in section V of this preamble, MSHA has determined and certified that this final rule does not have a significant economic impact on a substantial number of small entities. Accordingly, Executive Order 13272 requires no further agency action or analysis.

VIII. Petitions for Modification

On the effective date of this final rule, all existing granted petitions for modification for the use of fire extinguishers in lieu of rock dust and other firefighting equipment on working sections in underground anthracite coal mines and at temporary electrical installations in underground coal mines under existing § 75.1100-2(a)(2) and (e)(2), respectively, will be revoked. Thereafter, mine operators will be required to comply with the provisions of the final rule.

List of Subjects in 30 CFR Part 75

Coal mines, Fire prevention, Mine safety and health, Safety, Underground mining.

Dated: September 8, 2008.

Richard E. Stickler,

Acting Assistant Secretary for Mine Safety and Health.

For the reasons discussed in the preamble, the Mine Safety and Health Administration is amending 30 CFR part 75 as follows:

PART 75--MANDATORY SAFETY STANDARDS--UNDERGROUND COAL MINES

1. The authority citation for part 75 continues to read as follows:

Authority: *30 U.S.C. 811.*

2. Amend § 75.1100-2 by revising paragraph (a)(2), adding paragraph (a)(3), and revising paragraph (e) to read as follows:

§ 75.1100-2 Quantity and location of firefighting equipment.

(a) * * *

(2) Each working section of coal mines producing less than 300 tons of [*53128]coal per shift shall be provided with the following:

(i) Two portable fire extinguishers; and

(ii) 240 pounds of rock dust in bags or other suitable containers; and

(iii) At least 500 gallons of water and at least three pails of 10-quart capacity; or a waterline with sufficient hose to reach the working places; or a portable water car of at least 500-gallons capacity; or a portable, all-purpose, dry-powder chemical car of at least 125-pounds capacity.

(3) As an alternative to paragraph (a)(2) of this section, each working section with no electrical equipment at the face of an anthracite coal mine producing less than 300 tons of coal per shift shall be provided with the following:

(i) Portable fire extinguishers containing a total capacity of at least 30 pounds of dry chemical or 15 gallons of foam and located at the entrance to the gangway at the bottom of the slope; and

(ii) Portable fire extinguishers containing a total capacity of at least 20 pounds of dry chemical or 10 gallons of foam and located within 500 feet from the working face.

* * * * *

(e) Electrical installations. At each electrical installation, the operator shall provide two portable fire extinguishers that have a nominal capacity of 5 pounds of dry chemical, or one extinguisher that has a nominal capacity of at least 10 pounds of dry chemical, and which have a 2-A:10-B:C or higher rating.

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[FR Doc. E8-21448 Filed 9-12-08; 8:45 am]

BILLING CODE 4510-43-P