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**SUPPLEMENTARY INFORMATION:****Outline of the Preamble**

- I. Introduction
- II. Statutory and Rulemaking Background
- III. Section-By-Section Analysis
  - A. Subpart A—Mine Rescue Teams for Underground Metal and Nonmetal Mines
  - B. Subpart B—Mine Rescue Teams for Underground Coal Mines
- IV. Regulatory Economic Analysis
  - A. Executive Order 12866
  - B. Population at Risk
  - C. Compliance Costs
  - D. Benefits
- V. Feasibility
  - A. Technological Feasibility
  - B. Economic Feasibility
- VI. Regulatory Flexibility Act and Small Business Regulatory Enforcement Fairness Act
  - A. Definition of a Small Mine
  - B. Factual Basis for Certification
- VII. Paperwork Reduction Act of 1995
- VIII. Other Regulatory Considerations
  - A. The Unfunded Mandates Reform Act of 1995
  - B. The Treasury and General Government Appropriations Act of 1999: Assessment of Federal Regulations and Policies on Families
  - C. Executive Order 12630: Government Actions and Interference with Constitutionally Protected Property Rights
  - D. Executive Order 12988: Civil Justice Reform
  - E. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
  - F. Executive Order 13132: Federalism
  - G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
  - H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
  - I. Executive Order 13272: Proper Consideration of Small Entities in Agency Rulemaking

**I. Introduction**

This final rule updates MSHA's existing mine rescue team equipment standards for teams serving underground metal and nonmetal mines (part 49, subpart A, § 49.6) and underground coal mines (part 49, subpart B, § 49.16). MSHA developed this final rule from existing standards, Agency experience, and comments and testimony during the rulemaking. It is critical that mine rescue team members be provided with the latest in protective equipment so they can safely and effectively carry out their mission. These changes will increase safety and

improve the effectiveness of mine rescue teams in responding to mine emergencies.

**II. Statutory and Rulemaking Background**

In accordance with section 115(e) of the Federal Mine Safety and Health Act of 1977 (Mine Act), MSHA issued standards in 30 CFR part 49 for mine rescue teams at underground coal and metal and nonmetal mines (45 FR 47002; July 11, 1980). On September 6, 2007, MSHA published the proposed rule for Mine Rescue Team Equipment (72 FR 51338) to update mine rescue team equipment standards for underground coal and metal and nonmetal mines. MSHA held four public hearings on October 23, 2007, in Salt Lake City, Utah; on October 25, 2007, in Lexington, Kentucky; on October 30, 2007, in Charleston, West Virginia; and on November 1, 2007, in Birmingham, Alabama. In response to a request from the public, MSHA extended the comment period for the proposed rule from November 9, 2007, to November 16, 2007, to allow additional time for public review of transcripts.

**III. Section-by-Section Analysis**

On February 8, 2008, MSHA published a final rule for Mine Rescue Teams (73 FR 7636) making certain non-substantive organizational changes to 30 CFR part 49 and designating existing standards for underground metal and nonmetal mines as Subpart A—Mine Rescue Teams for Underground Metal and Nonmetal Mines, and existing standards for underground coal mines as Subpart B—Mine Rescue Teams for Underground Coal Mines.

MSHA requested comment on whether an oxygen resuscitator should be provided for use by mine rescue teams. A commenter stated that it was important to include resuscitators as standard mine rescue equipment and that one of his company's self-contained breathing apparatus (SCBAs) can be used as a resuscitator. However, other commenters emphasized that states have different requirements as to who may administer oxygen and that to use the oxygen resuscitator safely, personnel must have considerable training and retraining. When questioned by the MSHA panel concerning requirements of one particular state, the commenter stated that his state had specific requirements for use of emergency medical service systems and suggested that MSHA review the state's Web site.

Standard mine rescue practice is to have a spare oxygen breathing apparatus available for trapped miners during

search and rescue operations. In consideration of the differing state requirements, MSHA has decided not to require oxygen resuscitators in this final rule for these medical devices. Under the final rule, mine rescue teams could use oxygen resuscitators provided they are used in accordance with relevant state requirements and team members are properly trained. The mine operator and mine rescue team should determine whether it is appropriate to use an oxygen resuscitator.

*A. Subpart A—Mine Rescue Teams for Underground Metal and Nonmetal Mines**Section 49.6 Equipment and Maintenance Requirements**1. § 49.6(a)(1)*

The final rule, like the proposal, requires mine rescue stations to be equipped with 12 self-contained breathing apparatus (SCBAs), each having a 4-hour capacity rather than a 2-hour capacity. It updates the existing rule to reflect current industry practice. The higher capacity SCBAs provide for greater team effectiveness and provide a greater measure of safety and health for miners. The final rule also continues to require that the mine rescue station have any equipment necessary for testing the breathing apparatus and that the apparatus be approved by MSHA and NIOSH under 42 CFR part 84 subpart H. The final rule also contains non-substantive word changes. MSHA received no comments on this proposal.

*2. § 49.6(a)(2)*

The final rule, like the proposal, requires that mine rescue stations maintain supplies of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, as applicable to the supplied breathing apparatus and sufficient to sustain each team for 8 hours while using the breathing apparatus during rescue operations. MSHA received no comments on this proposal.

*3. § 49.6(a)(3)*

The final rule, like the proposal, requires mine rescue stations to be equipped with two extra, fully-charged oxygen bottles for every six SCBAs at the station. MSHA received a comment stating that the existing standard, which required one extra fully-charged oxygen bottle, was adequate. MSHA continues to believe that two extra oxygen bottles for every six SCBAs will assure an additional reserve of a critical safety component for mine rescue teams

during time-sensitive underground rescue or recovery operations.

**4. § 49.6(a)(4), (a)(5), and (a)(9)**

The final rule, like the proposal, addresses requirements for oxygen pumps, cap lamps, and spare parts and tools for repairing breathing apparatus and communication systems. MSHA received no comments on this proposal.

**5. § 49.6(a)(6)**

The final rule, like the proposal, requires mine rescue stations to be equipped with four gas detectors appropriate for each gas that may be encountered at the mines served. In addition, like the proposal, detectors must be capable of measuring specific concentrations of methane, oxygen, and carbon dioxide. Like the proposal, the final rule leaves the decision as to the type of detector to be used to the mine operator.

Commenters stated that it was unnecessary to require mine rescue stations serving non-gassy metal and nonmetal mines to have detectors to measure methane. Mine rescue teams serving metal and nonmetal mines generally would need gas detectors capable of measuring oxygen and carbon monoxide.

Underground metal and nonmetal mines classified under § 57.22003 as I-B, I-C, II-B, IV, V-B, and VI are commonly referred to as “non-gassy” mines. Existing § 57.22003 provides overall parameters and testing procedures for categorizing underground metal and nonmetal mines. Under the final rule, mine rescue stations that service these mines, with no methane in explosive concentrations, would not need detectors to measure methane.

Underground metal and nonmetal mines classified in accordance with § 57.22003 as I-A, II-A, III, and V-A are capable of producing methane gas in explosive concentrations and are commonly referred to as “gassy” mines. Currently, eight underground M/NM mines, classified under § 57.22003 as II-A, III, and V-A, are “gassy” mines. There are no active underground M/NM mines currently classified as I-A. Existing regulations in 30 CFR part 57 subpart T for these four categories of M/NM “gassy” mines require underground equipment to be approved, examinations for methane to be conducted at specified intervals, and the use of MSHA-approved monitoring or remote sensing devices. Mine rescue stations serving these mines must have detectors that measure methane in the concentration range specified in the final rule.

Some commenters stated that the existing requirement for mine rescue stations to have two detectors per station seemed sufficient. One commenter stated that the reason given in the proposal by MSHA that detectors require time to recharge and be calibrated does not take into account all brands of detectors. The commenter stated that Draeger detectors have replaceable alkaline batteries that could easily last the four hours teams might need to spend underground in rescue and/or recovery activities. However, the typical shift for a mine rescue team during underground search and rescue or recovery operations is eight hours, some of which is under oxygen. Shifts can last beyond eight hours under special circumstances (e.g., availability of transportation, type of work required, and availability of change-out teams). Gas detectors used underground by mine rescue teams are cycled through work shifts. After detectors have been used, they need to be cleaned, recharged, and sometimes recalibrated, so they can be used for the next shift. Mine rescue teams cannot go underground without the required gas-measuring instrumentation and, in time-sensitive emergencies, cannot wait for instruments to be recharged, cleaned, or recalibrated. Having four detectors, two per team, will allow teams to continue their rescue/recovery activities without having to be delayed. This requirement will also provide the team with a backup device underground in the event of an equipment failure.

Like the proposal, the final rule requires that detectors must be able to measure methane concentrations from 0 percent to 100 percent of volume and oxygen from 0 percent to at least 20 percent of volume. In response to comments, the final rule requires that detectors measure carbon monoxide from 0 ppm to at least 9,999 ppm. The proposal required that the detector measure to at least 10,000 ppm. A commenter stated that a multi-gas detector that measures carbon monoxide from 0 ppm to at least 9,999 ppm will soon be available and will be smaller and easier to carry than current versions, and that MSHA should permit this detector to be used. The final rule requires detectors to 9,999 ppm since this is essentially equivalent to 10,000 ppm.

Some commenters stated their preference to continue the longstanding practice of using electronic oxygen and carbon monoxide testers in conjunction with a bellows pump gas tube tester. One commenter asked whether the proposed rule would prohibit the bellows pump detector. Under the

proposal, MSHA did not intend to prohibit the bellows pump with gas tube detectors. However, if used, they must be capable of measuring the required gases within the ranges specified in the final rule. MSHA encourages the use of electronic gas detectors. These types of detectors are more accurate than gas tube-type detectors, and are available in the ranges required by the final rule.

**6. § 49.6(a)(7) Reserved**

The final rule, like the proposal, deletes the existing provision which required mine rescue stations to be provided with two oxygen indicators or flame safety lamps, since this equipment is technologically obsolete. MSHA received no comments on this proposal.

**7. § 49.6(a)(8)**

The final rule, like the proposal, makes organizational changes to the existing standard on communication systems. MSHA received no comment on this proposal.

**8. § 49.6(b)**

The final rule, like the proposal, requires that mine rescue team equipment be maintained to ensure readiness for immediate use. The final rule renames existing provisions, but makes no substantive changes. MSHA received no comments on this proposal.

*B. Subpart B—Mine Rescue Teams for Underground Coal Mines*

*Section 49.16 Equipment and Maintenance Requirements*

**1. § 49.16(a)**

The final rule, like the proposal, requires mine rescue stations to be equipped with certain equipment. It allows mine rescue stations serving certain underground anthracite coal mines to have the type and amount of equipment that would be appropriate for the number of their mine rescue team members.

As a result of granted petitions for modification, mine rescue teams for underground anthracite coal mines that have no electrical equipment at the face or working section are composed of three members with one alternate to serve both teams. Given these smaller teams, anthracite operators submitted petitions for modification requesting that their mine rescue stations be allowed to maintain eight SCBAs, eight cap lamps, and a charging station, rather than 12 of each as required by existing §§ 49.6(a)(1) and (a)(5). MSHA investigated each petition and made the following finding:

MSHA's investigation found that reducing the quantity of equipment required to be purchased and maintained at the anthracite mine rescue station to a quantity consistent with the requirements of granted modifications currently in effect, which allow anthracite mines to be covered by two mine rescue teams of three members each and an alternate, will provide the same measure of protection to the miners.

On the basis of those investigations, MSHA granted these petitions for modification of existing §§ 49.6(a)(1) and (a)(5). Currently, 11 underground anthracite coal mines operate under this approved alternative method. The reduced number of SCBAs and cap lamps would provide sufficient equipment for teams serving these anthracite coal mines. MSHA received no comments on this proposal.

#### 2. § 49.16(a)(1)

The final rule, like the proposal, requires mine rescue stations to be equipped with 12 SCBAs, each with a minimum 4-hour capacity, rather than a 2-hour capacity. It updates the existing rule to reflect current industry practice. The higher capacity SCBAs provide for greater team effectiveness and provide a greater measure of safety and health for miners. The final rule also continues to require that the mine rescue station have any equipment necessary for testing the breathing apparatus and that the apparatus be approved by MSHA and NIOSH under 42 CFR part 84 subpart H. The final rule also contains non-substantive word changes. MSHA received no comments on this proposal.

#### 3. § 49.16(a)(2)

The final rule, like the proposal, requires that mine rescue stations maintain supplies of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, as applicable to the supplied breathing apparatus and sufficient to sustain each team for eight hours while using the breathing apparatus during rescue operations. MSHA received no comments on this proposal.

#### 4. § 49.16(a)(3)

The final rule, like the proposal, requires mine rescue stations to be equipped with two extra, fully-charged, oxygen bottles for every six SCBAs at the station. The existing standard required one extra, fully-charged, oxygen bottle for every six SCBAs.

MSHA received a comment stating that the existing standard, which required one extra fully charged oxygen bottle, was adequate. MSHA continues to believe that two extra oxygen bottles for every six SCBAs will assure an

additional reserve of a critical safety component for mine rescue teams during time-sensitive underground rescue or recovery operations.

#### 5. §§ 49.16(a)(4), (a)(5), and (a)(9)

The final rule, like the proposal, addresses requirements for oxygen pumps, cap lamps, and spare parts and tools for repairing breathing apparatus and communication systems. MSHA received no comment on this proposal.

#### 6. § 49.16(a)(6)

The final rule, like the proposal, requires mine rescue stations to be equipped with four gas detectors appropriate for each gas that may be encountered at the mines served. In addition, like the proposal, detectors must be capable of measuring specific concentrations of methane, oxygen, and carbon dioxide. Like the proposal, the final rule leaves the decision as to the type of detector to be used to the mine operator.

Some commenters stated that the existing requirement for mine rescue stations to have two detectors per station seemed sufficient. One commenter stated that the reason given in the proposal by MSHA that detectors require time to recharge and be calibrated does not take into account all brands of detectors. The commenter stated Draeger detectors have replaceable alkaline batteries that could easily last the four hours teams might need to spend underground in rescue and/or recovery activities. However, the typical shift for a mine rescue team during underground search and rescue or recovery operations is eight hours, some of which is under oxygen. Shifts can last beyond eight hours under special circumstances (e.g., availability of transportation, type of work required, and availability of change-out teams). Gas detectors used underground by mine rescue teams are cycled through work shifts. After detectors have been used, they need to be cleaned, recharged, and sometimes re-calibrated, so they can be used for the next shift. Mine rescue teams cannot go

underground without the required gas-measuring instrumentation and, in time-sensitive emergencies, cannot wait for instruments to be recharged, cleaned, or recalibrated. Having four detectors, two per team, will allow teams to continue their rescue/recovery activities without having to be delayed. This requirement will also provide the team with a backup device underground in the event of an equipment failure.

Like the proposal, the final rule requires that detectors must be able to measure methane concentrations from 0

percent to 100 percent of volume and oxygen from 0 percent to at least 20 percent of volume. In response to comments, the final rule requires that detectors measure carbon monoxide from 0 ppm to at least 9,999 ppm. The proposal required that the detector measure to at least 10,000 ppm. A commenter stated that multi-gas detectors that measure carbon monoxide from 0 ppm to at least 9,999 ppm will soon be available, and will be smaller and easier to carry than current versions, and that MSHA should permit this detector to be used. The final rule requires detectors to 9,999 ppm since this is essentially equivalent to 10,000 ppm.

Some commenters stated their preference to continue the longstanding practice of using electronic oxygen and carbon monoxide testers in conjunction with a bellows pump gas tube tester. One commenter asked whether the proposed rule would prohibit the bellows pump detector. Under the proposal, MSHA did not intend to prohibit the bellows pump with gas tube detectors. However, if these devices are used, they must be capable of measuring the required gases within the ranges specified in the final rule. MSHA encourages the use of electronic gas detectors. These types of detectors are more accurate than gas tube-type detectors, and are available in the ranges required by the final rule.

#### 7. § 49.16(a)(7) Reserved

The final rule, like the proposal, deletes the existing provision that mine rescue stations be provided with two oxygen indicators or flame safety lamps since this equipment is technologically obsolete. MSHA received no comment on this proposal.

#### 8. § 49.16(a)(8)

The final rule, like the proposal, requires that mine rescue team equipment include a communication system. One commenter suggested that MSHA allow handheld permissible radios to satisfy the requirement. In support of this suggestion, the commenter stated that these radios are the best technology, and have been used by the commenter exclusively in mine emergencies and underground training for the past five years. Mine rescue teams may use a wireless communication system or a wired system provided the system is approved under Part 23 of this title.

#### 9. § 49.16(b)

The final rule, like the proposal, requires that mine rescue team equipment be maintained to ensure

readiness for immediate use. MSHA received no comments on this proposal.

#### **IV. Regulatory Economic Analysis**

##### *A. Executive Order 12866*

Executive Order (E.O.) 12866 (58 FR 51735), as amended by E.O. 13258 (67 FR 9385), requires that regulatory agencies assess both the costs and benefits of regulations. E.O. 12866 classifies a rule as a significant regulatory action requiring review by the Office of Management and Budget if, among other things, it has an annual effect on the economy of \$100 million or more; creates a serious inconsistency or interferes with an action of another agency; materially alters the budgetary impact of entitlements or the rights of entitlement recipients; or raises novel legal or policy issues. MSHA has determined that the final rule does not have an annual effect of \$100 million or more on the economy and that, therefore, it is not an economically "significant regulatory action" pursuant to 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.

##### *B. Population at Risk*

Based on data for 2007, the final rule applies to 613 underground coal mines and 233 underground metal and nonmetal mines with miners working underground. It covers 42,176 coal miners, 15,223 metal and nonmetal miners, and 8,139 coal and metal and nonmetal (non-office) contractors working underground in these mines.

##### *C. Compliance Costs*

MSHA estimates that the total yearly cost of the final rule is approximately \$812,000. MSHA estimates that the costs are allocated as follows: approximately \$452,000 for coal operators, approximately \$250,000 for metal and nonmetal operators, and approximately \$110,000 for State and local governments. Government-owned mine rescue stations serving underground coal mines include 20 State, one county, and two public colleges. Government-owned mine rescue stations serving underground metal and nonmetal mines include one Federal and 13 State. Some of the mine rescue stations serving underground coal mines also serve underground metal and nonmetal mines.

Final § 49.16(a) requires that mine rescue stations serving underground anthracite coal mines, which have no electrical equipment at the face or working section, have at least the

amount of equipment appropriate for the number of mine rescue team members. These anthracite coal mines typically have fewer mine rescue team members. This standard allows mine rescue stations associated with mine rescue teams having a reduced number of members to maintain fewer SCBAs, cap lamps, and charging racks than required under §§ 49.16(a)(1) and (a)(5) for other coal mine rescue stations. Because granted petitions for modification already permit these anthracite coal mines to have equipment appropriate for the number of mine rescue team members, MSHA estimates that, for anthracite mines, there will be no change in costs for this provision.

Final §§ 49.6(a)(1) and 49.16(a)(1) require that mine rescue stations serving underground metal and nonmetal and coal mines be equipped with 12 SCBAs, each with a minimum 4-hour capacity, and associated testing equipment. Because MSHA has determined that all mine rescue stations serving metal and nonmetal and coal mines are already equipped with MSHA and NIOSH approved 4-hour SCBAs and associated testing equipment, the Agency estimates that there are no costs associated with this requirement.

Final §§ 49.6(a)(2) and 49.16(a)(2) require that mine rescue stations serving underground coal and metal and nonmetal mines increase their supply of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals and carbon dioxide absorbent chemicals from six hours to eight hours for each team. Based on MSHA's knowledge and experience, these supplies are purchased in bulk, and the final rule would only cause mine operators to restock these supplies slightly more frequently. MSHA estimates that the associated cost would be negligible. Under the final rule, mine operators must stock an extra two hours of liquid oxygen, pressurized oxygen, or oxygen generating chemicals and carbon dioxide absorbent chemicals; they do not have to use them in training.

Final §§ 49.6(a)(3) and 49.16(a)(3) require that two additional fully-charged oxygen bottles be provided for every six self-contained breathing apparatus. The existing standard required one extra, fully-charged oxygen bottle for every six self-contained breathing apparatus. To meet the final requirements, MSHA estimates that one additional oxygen bottle will have to be purchased for each mine rescue station. MSHA estimates that the cost for one oxygen bottle is \$1,615, to which MSHA has applied an annualization factor of 0.11 to reflect a 7 percent discount rate applied over 15 years. The resulting

annualized cost is \$178 for each mine rescue station. There are 92 existing mine rescue stations serving underground coal mines and a total of 65 mine rescue stations serving metal and nonmetal mines. In the Agency's final rule for Mine Rescue Teams (73 FR 7635, February 8, 2008), MSHA estimated that the underground coal mining industry will need to create 28 additional stations, for a total of 120 mine rescue stations. MSHA estimates that the yearly cost of this final requirement is \$11,570 for mine rescue stations serving underground metal and nonmetal mines, and \$21,360 for mine rescue stations serving underground coal mines.

Final §§ 49.6(a)(6) and 49.16(a)(6) require mine rescue stations serving underground metal and nonmetal mines and underground coal mines to have four gas detectors appropriate for each type of gas that may be encountered at the mines served. Gas detectors must measure concentrations of methane from 0.0 percent to 100 percent of volume, oxygen from 0.0 percent to at least 20 percent of volume, and carbon monoxide from 0.0 parts per million to at least 9,999 parts per million. Oxygen is present in all underground metal and nonmetal mines, and carbon monoxide can be found in the vast majority of underground metal and nonmetal mines. Other gases can also be found in underground metal and nonmetal mines. Methane, oxygen, and carbon monoxide and other gases can be found in underground coal mines.

To estimate the incremental costs for gas detectors under this final rule, MSHA compared the cost for gas detectors under the final rule to the baseline cost for gas detectors under the existing rule. Either single-gas or multi-gas detectors may be used under the existing and final rules, but for costing purposes MSHA assumed that multi-gas detectors are being and will be used. In addition, in response to comments, MSHA increased costs from the proposal to cover maintenance and calibration.

Under the existing rule, each mine rescue station is required to have two gas detectors appropriate for each type of gas that may be encountered at the mines served. Mine rescue stations currently have multi-gas detectors that comply with the existing rule, and these detectors would have to be replaced over time. MSHA assumed a replacement cost of \$2,000 for each multi-gas detector required under the existing rule. MSHA also assumed that the existing calibration kit for each mine rescue station would not need to be replaced. MSHA estimates that the

essential accessories for a multi-gas detector include a charging module, a battery pack, a protective case, and a remote sampling pump at a cost of \$862. The total estimated baseline cost for for a multi-gas detector and essential accessories is \$2,862. These baseline costs are subject to an annualization factor of 0.244 to reflect a 7 percent discount rate and a service life of 5 years. MSHA further assumed that replacement of a multi-gas detector and essential accessories under the existing rule would have occurred in approximately three years. Therefore, these baseline costs were discounted by three years using a 7 percent discount rate. The estimated annualized cost for the replacement of a multi-gas detector and essential accessories is \$569.

In addition, MSHA estimated a baseline cost of \$712 for annual maintenance and calibration for each multi-gas detector. MSHA assumed that annual maintenance and calibration would have continued each following year and, therefore, annual maintenance baseline costs were discounted by one year using a 7 percent discount rate. The discounted baseline cost for annual maintenance and calibration for a multi-gas detector is estimated to be \$666.

The total estimated yearly baseline cost to replace a multi-gas detector and essential accessories and to maintain and calibrate the multi-gas detector

under the existing rule is \$1,235 a year. Because each mine rescue station is required to have two gas detectors under the existing rule, the total baseline cost for two multi-gas detectors is \$2,470 for each mine rescue station.

Under the final rule, MSHA estimates that all mine rescue stations will be equipped with four multi-gas detectors appropriate for each type of gas that may be encountered at the mines served. MSHA also estimates that all mine rescue stations will be equipped with essential accessories for each multi-gas detector and that each mine will be equipped with one calibration kit. In response to comments, MSHA increased the cost for each multi-gas detector from \$2,000 under the proposal to \$3,000 under this final rule. MSHA estimates that the cost of essential accessories for a multi-gas detector is \$862 and that a calibration kit costs approximately \$268. The estimated cost for four multi-gas detectors, four essential accessories, and one calibration kit is \$15,716. These costs are all subject to an annualization factor of 0.244 to reflect a 7 percent discount rate and a service life of 5 years. The annualized cost to purchase the four multi-gas detectors, four essential accessories, and one calibration kit under this final rule is \$3,835 for each mine rescue station. In addition, MSHA estimates that the annual maintenance

and calibration cost for a multi-gas detector is approximately \$712, for a total of \$2,848 for four multi-gas detectors. The total estimated yearly cost to purchase four multi-gas detectors, four essential accessories, and a calibration kit, and to maintain and calibrate the four multi-gas detectors is \$6,683.

MSHA estimates that the incremental yearly cost of the gas detectors is \$4,213 (\$6,683 minus the baseline cost of \$2,470) for each mine rescue station, and a total of \$273,845 for the 65 mine rescue stations serving underground metal and nonmetal mines, and \$505,580 for the 120 mine rescue stations serving underground coal mines.

MSHA has not associated any costs with the existing requirements for mine rescue stations to be equipped with either two oxygen indicators or two flame safety lamps, since they reflect obsolete technology. MSHA believes that most mine operators have already replaced flame safety lamps and oxygen indicators with new, more accurate technologically advanced devices.

Table I summarizes the estimated total cost of this rule. In response to comments, MSHA has estimated separate costs for mine rescue stations serving underground coal mines and underground metal and nonmetal mines of \$526,920 and \$285,415, respectively.

TABLE I—ESTIMATED TOTAL YEARLY COST OF THE FINAL RULE

Mine size	Number of mine rescue stations	Annualized cost per mine rescue station for one oxygen bottle	Annualized incremental cost per mine rescue station for gas detectors under final rule	Total yearly cost
<b>Mine Rescue Stations Serving Underground Coal Mines</b>				
1–19 .....	19	\$178	\$4,213	\$83,429
20–500 .....	71	178	4,213	311,761
501+ .....	13	178	4,213	57,083
Government .....	17	178	4,213	74,647
<b>Total .....</b>	<b>120</b>			<b>526,920</b>
<b>Mine Rescue Stations Serving Underground Metal and Non-Metal Mines</b>				
1–19 .....	2	\$178	\$4,213	\$8,782
20–500 .....	50	178	4,213	219,550
501+ .....	5	178	4,213	21,955
Government .....	8	178	4,213	35,128
<b>Total .....</b>	<b>65</b>			<b>285,415</b>

#### D. Benefits

The requirements in this rule will improve and enhance equipment for mine rescue teams who must respond, for rescue and recovery, to an emergency at an underground mine.

Mine operators often rely on mine rescue teams to save miners during an underground emergency, such as an explosion, fire, roof fall, or water inundation. Mine rescue team members often put themselves in danger to save

miners injured or trapped underground as the result of these events, and to recover miners who can't be rescued. To help them to conduct mine rescue and recovery activities safely and effectively, mine rescue teams must be provided

with up-to-date mine rescue equipment. In an emergency, a properly equipped mine rescue team could mean the difference between life and death.

## V. Feasibility

MSHA has concluded that the requirements of the final rule are technologically and economically feasible.

### A. Technological Feasibility

This final rule is technologically feasible because all mine rescue team equipment required in this rule is available and in use in many underground mines.

### B. Economic Feasibility

Due to a total cost of approximately \$812,000 for this rule, MSHA concludes that the rule is economically feasible.

## VI. Regulatory Flexibility Act and Small Business Regulatory Enforcement Fairness Act

In accordance with the Regulatory Flexibility Act (RFA) of 1980 as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), MSHA analyzed the impact of the final rule on small entities. Based on that analysis, MSHA notified the Chief Counsel for Advocacy, Small Business Administration (SBA), and made the certification under section 605(b) of the Regulatory Flexibility Act that the final rule does not have a significant economic impact on a substantial number of small entities. The factual basis for this certification is presented below.

### A. Definition of a Small Mine

Under the RFA, in analyzing the impact of a rule on small entities, MSHA must use the SBA definition for a small entity or, after consultation with the SBA Office of Advocacy, establish an alternative definition for the mining industry by publishing that definition in the **Federal Register** for notice and comment. MSHA has not taken such an action and, thus, is required to use the SBA definition. The SBA defines a small entity in the mining industry as an establishment with 500 or fewer employees.

MSHA has also examined the impacts of this rule on underground coal and metal and nonmetal mines with fewer than 20 employees, which MSHA has traditionally referred to as "small mines." These small mines differ from larger mines not only in the number of employees, but also in economies of scale in material produced, in the type and amount of production equipment, and in supply inventory.

### B. Factual Basis for Certification

MSHA initially evaluates the economic impact of a rule on "small entities" by comparing the estimated cost of the rule for small entities to their estimated revenue. When the estimated cost is less than one percent of estimated revenue for the size categories considered, MSHA believes it is generally appropriate to conclude that there is not a significant economic impact on a substantial number of small entities. Due to the costs of this final rule, MSHA certifies that it does not have a significant economic impact on a substantial number of small entities.

## VII. Paperwork Reduction Act of 1995

The final rule, like the existing rule, requires certification of inspection, testing, and any corrective action taken for breathing apparatus. MSHA estimates that any additional paperwork burden due to the requirements in the final rule is *de minimis* and, therefore, has not included an additional paperwork burden.

## VIII. Other Regulatory Considerations

### A. The Unfunded Mandates Reform Act of 1995

MSHA has reviewed the final rule under the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1501 *et seq.*). The final rule will not increase private sector expenditures by more than \$100 million annually; nor will it significantly or uniquely affect small governments. The final rule may increase expenditures minimally by State, local, or tribal governments, because it requires certain new equipment for mine rescue stations. These changes will not directly affect States or their relationships with the national government; however, some States sponsor or equip mine rescue stations.

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

This final rule will have no 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

This final rule would not implement a policy with takings implications.

Accordingly, E.O. 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights, requires no further Agency action or analysis.

### D. Executive Order 12988: Civil Justice Reform

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 E.O. 12988, Civil Justice Reform.

### E. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This final rule would have no adverse impact on children. Accordingly, E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks, as amended by E.O. 13229 and 13296, requires no further Agency action or analysis.

### F. Executive Order 13132: Federalism

Executive Order (E.O.) 13132 requires MSHA to develop an accountable process to ensure a meaningful and timely input by State and local officials in the development of regulatory policies that have "federalism implications." Policies that have federalism implications are defined as having "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." The final rule places new equipment requirements on mine operators and States that provide mine rescue stations. These changes will not directly affect States or their relationships with the federal government. Although the final rule does not directly affect States, some States sponsor or equip mine rescue stations.

### G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This final rule would 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, E.O. 13175, Consultation and Coordination with Indian Tribal

Governments, requires no further Agency action or analysis.

*H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This final rule has been reviewed for its impact on the supply, distribution, and use of energy because it applies to the underground coal mining sector. Insofar as this final rule results in yearly costs of approximately \$0.5 million to the underground coal mining industry, relative to annual revenues of \$14.1 billion in 2007, it is not a “significant energy action” because it will not be “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, E.O. 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, requires no further Agency action or analysis.

*I. Executive Order 13272: Proper Consideration of Small Entities in Agency Rulemaking*

MSHA has reviewed the final rule to assess and take appropriate account of its potential impact on small businesses, small governmental jurisdictions, and small organizations. MSHA has determined and certified that the final rule does not have a significant economic impact on a substantial number of small entities.

**List of Subjects in 30 CFR Part 49**

Coal mines, Emergency equipment and maintenance, Emergency response services, Metal mines, Mine safety and health, Nonmetal mines, Underground mining.

Dated: September 9, 2008.

**Richard E. Stickler,**

*Acting Assistant Secretary for Mine Safety and Health.*

■ For the reasons set out in the preamble, and under the authority of the Federal Mine Safety and Health Act of 1977, as amended by the Mine Improvement and New Emergency Response Act of 2006, MSHA is amending chapter I of title 30 of the Code of Federal Regulations as follows:

**PART 49—MINE RESCUE TEAMS**

■ 1. The authority for part 49 continues to read as follows:

**Authority:** 30 U.S.C. 811, 825(e), 957.

■ 2. Revise § 49.6 to read as follows:

**§ 49.6 Equipment and maintenance requirements.**

(a) Each mine rescue station shall be provided with at least the following equipment:

(1) Twelve self-contained breathing apparatus, each with a minimum of 4 hours capacity (approved by MSHA and NIOSH under 42 CFR Part 84, Subpart H), and any necessary equipment for testing such breathing apparatus;

(2) A portable supply of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, applicable to the supplied breathing apparatus and sufficient to sustain each team for eight hours while using the breathing apparatus during rescue operations.

(3) Two extra, fully-charged oxygen bottles for every six self-contained breathing apparatus;

(4) One oxygen pump or a cascading system, compatible with the supplied breathing apparatus;

(5) Twelve permissible cap lamps and a charging rack;

(6) Four gas detectors appropriate for each type of gas that may be encountered at the mines served. Gas detectors must measure concentrations of methane from 0.0 percent to 100 percent of volume, oxygen from 0.0 percent to at least 20 percent of volume, and carbon monoxide from 0.0 parts per million to at least 9,999 parts per million.

(7) [Reserved].

(8) One portable mine rescue communication system (approved under part 23 of this title) or a sound-powered communication system.

(i) The wires or cable to the communication system shall be of sufficient tensile strength to be used as a manual communication system.

(ii) These communication systems shall be at least 1,000 feet in length.

(9) Necessary spare parts and tools for repairing the breathing apparatus and communication system.

(b) Mine rescue apparatus and equipment shall be maintained in a manner that will ensure readiness for immediate use.

(1) A person trained in the use and care of breathing apparatus shall inspect and test the apparatus at intervals not exceeding 30 days and shall certify by signature and date that the inspections and tests were done.

(2) When the inspection indicates that a corrective action is necessary, the corrective action shall be made and the person shall record the corrective action taken.

(3) The certification and the record of corrective action shall be maintained at

the mine rescue station for a period of one year and made available on request to an authorized representative of the Secretary.

■ 3. Revise § 49.16 to read as follows:

**§ 49.16 Equipment and maintenance requirements.**

(a) Each mine rescue station shall be provided with at least the following equipment. Mine rescue stations serving underground anthracite coal mines, which have no electrical equipment at the face or working section, shall have at least the amount of equipment appropriate for the number of mine rescue team members.

(1) Twelve self-contained breathing apparatus, each with a minimum of 4 hours capacity (approved by MSHA and NIOSH under 42 CFR part 84, subpart H), and any necessary equipment for testing such breathing apparatus.

(2) A portable supply of liquid air, liquid oxygen, pressurized oxygen, or oxygen generating chemicals, and carbon dioxide absorbent chemicals, as applicable to the supplied breathing apparatus and sufficient to sustain each team for 8 hours while using the breathing apparatus during rescue operations.

(3) Two extra, fully-charged oxygen bottles for every six self-contained breathing apparatus.

(4) One oxygen pump or a cascading system, compatible with the supplied breathing apparatus.

(5) Twelve permissible cap lamps and a charging rack.

(6) Four gas detectors appropriate for each type of gas that may be encountered at the mines served. Gas detectors must measure concentrations of methane from 0.0 percent to 100 percent of volume, oxygen from 0.0 percent to at least 20 percent of volume, and carbon monoxide from 0.0 parts per million to at least 9,999 parts per million.

(7) [Reserved].

(8) One portable mine rescue communication system (approved under part 23 of this title) or a sound-powered communication system.

(i) The wires or cable to the communication system shall be of sufficient tensile strength to be used as a manual communication system.

(ii) These communication systems shall be at least 1,000 feet in length.

(9) Necessary spare parts and tools for repairing the breathing apparatus and communication system.

(b) Mine rescue apparatus and equipment shall be maintained in a manner that will ensure readiness for immediate use.

(1) A person trained in the use and care of breathing apparatus shall inspect

and test the apparatus at intervals not exceeding 30 days and shall certify by signature and date that the inspections and tests were done.

(2) When the inspection indicates that a corrective action is necessary, the corrective action shall be made and the person shall record the corrective action taken.

(3) The certification and the record of corrective action shall be maintained at the mine rescue station for a period of 1 year and made available on request to an authorized representative of the Secretary.

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## DEPARTMENT OF LABOR

### Mine Safety and Health Administration

#### 30 CFR Part 75

RIN 1219-AB40

#### Fire Extinguishers in Underground Coal Mines

**AGENCY:** Mine Safety and Health Administration, Labor.

**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.

**DATES:** This rule is effective October 15, 2008.

#### SUPPLEMENTARY INFORMATION:

##### I. Introduction

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 2½ 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.