Preliminary Regulatory Economic Analysis

For

High-Voltage Continuous Mining Machine Proposed Rule

(RIN 1219-AB34)
Add §18.54 to 30 CFR Part 18
Add §§75.823 through 75.833 to 30 CFR Part 75, Subpart I

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I. EXECUTIVE SUMMARY

INTRODUCTION

For underground coal mine operators, the proposed rule establishes: (1) design requirements for approval of high-voltage continuous mining machines operated in the permissible areas of the mine; and (2) new mandatory electrical safety standards for the installation, use, and maintenance of high-voltage continuous mining machines. As a result of this rulemaking, underground coal mine operators would no longer need to file for Petitions for Modifications (PFMs) to use high-voltage continuous mining machines in extracting coal. In addition, the rule would enable mine operators to use high-voltage continuous mining machines with enhanced safety protection.

BACKGROUND

The energy used by electrical equipment in mines has increased over the years. Voltage to operate this equipment has also increased to accommodate the increased energy demand. The mining industry has been moving toward the use of high-voltage continuous mining machines to increase productivity and improve miner safety. Existing standard 30 CFR §75.1002 (Installation of electrical equipment and conductors; permissibility) does not allow mine operators to use high-voltage continuous mining machines in or inby the last open crosscut. To allow mine operators to use high-voltage continuous mining machines in the face area of an underground coal mine, the Mine Safety and Health Administration (MSHA) has granted PFMs of existing 30 CFR §75.1002. This rule would eliminate the need for such PFMs.

MINING SECTORS AFFECTED BY THIS RULEMAKING

This proposed rule would apply to the 702 underground coal mines in the United States (and the approximately 38,000 underground coal miners that they employ).

BENEFITS

The proposed rule would reduce the potential for electrical-related fatalities and injuries. This risk reduction would be derived from the improved electrical safety requirements when using high-voltage continuous mining machines due to: better design and construction criteria (such as required use of double-jacketed cables); improved ground-fault protection; handling of lighter cables; and increased safety requirements for work practices. These design and work practice requirements offer greater protection against electrical shock, cable overheating, fire hazards, unsafe work and repair practices, and back injuries and other sprains caused by handling trailing cables.

COMPLIANCE COSTS

This proposed rule would result in estimated yearly net compliance cost savings of approximately $1.40 million for mine operators.

For mine operators with 20 to 500 employees, there would be yearly compliance costs of about $30,500 and yearly compliance cost savings of $1.433 million, which would result in net cost savings of about $1.40 million. The one mine operator with more than 500 employees who is currently using high-voltage continuous mining machines would incur yearly compliance costs of $61. Chapter IV, Table IV-1, of this document shows, by size category, a summary of the compliance costs and savings for mine operators to implement the proposed rule.

EXECUTIVE ORDER 12866 AND THE REGULATORY FLEXIBILITY ACT

Executive Order 12866 requires that regulatory agencies assess the compliance costs and benefits of intended regulations. MSHA has fulfilled this requirement for the high-voltage continuous mining machine proposed rule and determined that this rule is not economically significant.

The Regulatory Flexibility Act (RFA) requires regulatory agencies to consider a rule's economic impact on small entities. Under the RFA, MSHA must use the Small Business Administration's (SBA's) criterion for a small entity in determining a rule's economic impact unless, after consultation with the SBA Office of Advocacy, MSHA establishes an alternative definition for a small mine operator and publishes that definition in the *Federal Register* for notice and comment. For the mining industry, SBA defines "small" as a mine operator with 500 or fewer employees. In addition, MSHA traditionally has considered small mine operators to be those with fewer than 20 employees.

Although the rule does apply to mine operators with fewer than 20 employees that choose to use high-voltage continuous mining machines, MSHA's experience is that no underground coal mine operator with fewer than 20 employees has ever requested a PFM to use high-voltage continuous mining machines. Absent this rulemaking, MSHA does not expect any PFMs to use high-voltage continuous mining machines from mine operators having fewer than 20 employees. However, MSHA has analyzed the economic impact of the proposed rule on all underground coal mine operators with 500 or fewer employees, which conforms to the requirements of the RFA.

Using SBA's definition of a small mine operator, the estimated yearly net compliance cost savings of the proposed rule on small underground coal mine operators is approximately $1.40 million. These estimated yearly net compliance cost savings compare with estimated annual revenues of approximately $8.3 billion for small underground coal mine operators with 500 or fewer employees.

Based on its analysis, MSHA has determined that the proposed rule would not have a significant economic impact on a substantial number of small underground coal mine operators with 500 or fewer employees. MSHA has so certified these findings to the SBA. The factual basis for this certification is discussed in Chapter V of this document.

II. INDUSTRY PROFILE

INTRODUCTION

This industry profile provides background information about the structure and economic characteristics of the mining industry. It includes data about the number of mines and miners by type and size of mine. Even though the proposed rule would affect only underground coal mines, some economic data are provided for the entire coal mining industry, both underground and surface. This profile also provides more detailed information about continuous mining machines in underground coal mines.

STRUCTURE OF THE MINING INDUSTRY

MSHA divides the mining industry into two major sectors based on commodity: (1) coal mines and (2) metal and non-metal (M/NM) mines. These two sectors are further divided by operation type (e.g., underground mines or surface mines). The Agency maintains its own data on the number of mines and on mining employment by mine type and size. MSHA also collects data on the number of independent contractors and contractor employees by mining sector.

MSHA categorizes mines into three groups based on the number of employees. These are mines that have: (1) fewer than 20 employees; (2) 20 to 500 employees; and (3) more than 500 employees. For the past 20 years, for rulemaking purposes, the Agency has consistently defined a small mine to be one employing fewer than 20 employees and a large mine to be one employing 20 or more employees. However, to comply with the requirements of the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act (RFA), MSHA must use the Small Business Administration's (SBA's) criteria for a small entity when determining a rule's economic impact. For the mining industry, SBA defines a small mine as one having 500 or fewer employees and a large mine as one that has more than 500 employees. Thus, combining the first two MSHA mine categories noted above will meet the SBA's definition of a small mine.

Table II-1 provides the number of small and large coal mines and their employment, excluding contractors, for the coal mining sector by mine type. This table presents the three mine size categories based on employment. It shows that, of all coal mines, about 34 percent are underground mines employing about 52 percent of miners, while about 66 percent are surface mines employing about 48 percent of miners.

Table II-1: Distribution of Coal Operations and Employment (Excluding Contractors)

by Mine Type and Size, 2002

Mine Type	Size of Coal Mine *									All Coal Mines		
	< 20 Employees			20 to 500 Employees			> 500 Employees					
	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.
Underg.	271	2,728	71	424	31,649	818	7	3,841	117	702	38,218	1,006
Surface	879	5,363	428	472	28,633	1,944	3	1,879	51	1,354	35,875	2,423
Total	1,150	8,091	499	896	60,282	2,762	10	5,720	168	2,056	74,093	3,429

*Based on MSHA's traditional definition, small mines are those in the <20 employees category. Based on SBA's definition, small mines are those in the <20 employees and 20 to 500 employees categories.

Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2002 data.

Table II-2 presents corresponding data on the number of independent coal contractors and their employment for calendar year 2002. Table II-2 shows that, of all coal contractor firms, about 29 percent operated in underground mines and employed about 30 percent of contractor employees (excluding office employment), while 71 percent operated at surface mines and employed 70 percent of contractor employees (excluding office employment).

Table II-2: Distribution of Coal Contractors and Contractor Employment by Size of Operation, 2002

Contr. Type	Size of Coal Contractor *									All Coal Contractors		
	< 20 Employees			20 to 500 Employees			> 500 Employees					
	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.	Mines	Miners	Office Emp.
Underg.	712	3,151	236	105	5,958	400	0	0	0	817	9,109	636
Surface	1,743	7,354	550	256	13,901	934	0	0	0	1,999	21,255	1,484
Total	2,455	10,505	786	361	19,859	1,334	0	0	0	2,816	30,364	2,120

* Based on MSHA's traditional definition, small contractors are those in the <20 employees category. Based on SBA's definition, small contractors are those in the <20 employees and 20 to 500 employees categories.

Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2002 data, and U.S. Department of Labor, Mine Safety and Health Administration, 2002 Final Data, CT441 Report, cycle 2002/381.

STRUCTURE OF THE COAL INDUSTRY

MSHA data in Table II-1 indicate that there were 2,056 coal mines that reported production during some portion of calendar year 2002. When applying MSHA's small mine definition (fewer than 20 employees), 1,150 (about 56 percent) were small mines and 906 (about 44 percent) were large mines. Using SBA's small mine definition, 10 mines (0.5 percent) were large mines and the rest were small mines.

Coal mine employment in 2002 was 77,522, of which 74,093 were miners and 3,429 were office employees. Based on MSHA's small mine definition, 8,091 coal miners (11 percent) in 2002 worked at small mines and 66,002 miners (89 percent) worked at large mines. Using SBA's small mine definition, 68,373 coal miners (92 percent) worked at small mines and 5,720 coal miners (8 percent) worked at large mines. Based on the Agency's small mine definition, on average, each small coal mine employed 7 miners and each large coal mine employed 73 miners. Using SBA's small mine definition, on average, each small coal mine employed 33 miners and each large coal mine employed 572 miners.

ECONOMIC CHARACTERISTICS OF THE COAL MINING INDUSTRY

MSHA classifies the U.S. coal mining sector into two major commodity groups: bituminous and anthracite. The former is further divided into sub-bituminous and lignite. Bituminous operations represent about 92 percent of coal mining operations, employ over 98 percent of all coal miners, and account for over 99 percent of total coal production. The remaining 8 percent of coal mining operations are mostly lignite.[1]

The U.S. coal sector produced approximately 1.093 billion short tons of coal (0.739 billion tons at surface mines and 0.354 billion tons at underground mines) in 2002.[2] The 2002 price of coal at surface and underground mines was $13.65 and $26.68 per ton, respectively.[3] Surface coal mines accounted for $10.1 billion of revenues and underground coal mines accounted for $9.4 billion, for a total of $19.5 billion. Based on MSHA's definition, small mines produced 28.2 million tons, valuing at about $0.5 billion. Based on SBA's definition, small mines produced 906 million tons, valued at $16.4 billion, or about 83 percent of coal production and about 84 percent of coal revenues.[4]

Mines east of the Mississippi River accounted for about 47 percent of coal production in 2001. For the period 1949 through 2001, coal production east of the

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[1] U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, November 2002, Table 7.2, p. 203.

[2] U.S. Department of Labor Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2002 data.

[3] U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002*, Table 28 p. 52, DOE/EIA-0584(2002).

[4] Coal production obtained from U.S. Department of Labor, Mine Safety and Health Administration, Directorate of Program Evaluation and Information Resources, 2002 data. Average U.S. coal price estimates obtained from the U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002*, Table 28 p. 52, DOE/EIA-0584(2002). Underground and surface coal revenues are separately computed, then summed to obtain total coal revenue.

Mississippi River ranged from a low of 395 million tons in 1954 to a high of 630 million tons in 1990; 2001 production was estimated at 526 million tons. During this same period, however, coal production west of the Mississippi increased each year from a low of 20 million tons in 1959 to an estimated record high of 596 million tons in 2001.[5] Growth in western coal production has been due, in part, to environmental concerns that increase demand for low-sulfur coal, which is in abundance in the West. In addition, surface mining, with its higher average productivity, is much more prevalent in the West.

COAL MINING INDUSTRY OUTLOOK

The U.S. coal industry enjoys a fairly constant domestic demand. About 91 percent of U.S. coal production was used by electric power producers in 2001.[6] Domestic coal demand is projected to increase because of growth in coal use for electricity generation. Coal use for electricity generation is projected to increase as the utilization of existing coal-fired generation capacity increases and as new capacity is added. The average utilization rate is projected to increase from 69 percent in 2001 to 83 percent in 2025. The amount of U.S coal exported in 2001 was 49 million tons (about 5 percent of production). These exports are projected to decline in the future, to about 26 million tons by 2025.[7]

CONTINUOUS MINING MACHINES IN UNDERGROUND COAL MINES

Continuous mining is a method of mining that utilizes a continuous mining machine that could be operated from the machine itself or by remote control. The continuous mining machine cuts and loads coal into shuttle cars or onto conveyor belts that remove the coal from the mine. The continuous mining machine is powered from an electrical power center which has cables running from the power center to the machine. These cables are moved by miners as the continuous mining machine progresses in cutting the coal. In 2002, continuous mining machines accounted for approximately 46 percent of all underground coal production.[8]

The amount of energy used to operate electrical equipment in underground coal mines has increased over the years. The voltage used to operate continuous mining equipment has increased to accommodate the increased energy demand. In addition, over the years, high-voltage electric equipment design has become safer and more efficient. The underground coal mining community has been moving toward the use of high-voltage continuous mining machines to increase productivity and improve cable handling safety. A study performed by the Illinois Clean Coal Institute (ICCI) reports that a high-voltage continuous mining machine can increase production by 30 percent over a low- or medium-voltage continuous mining machine, provided that coal can be hauled

[5] Ibid.

[6] U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, November 2002, Table 7.3, p. 205.

[7] U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2003*, January 2003, pp. 89, 90.

[8] U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002*, Table 3 p. 14, DOE/EIA-0584(2002).

away from the face, and the roof bolting cycle keeps up with the cutting cycle.[9] In the ICCI study, production modeling was conducted on high-voltage and standard-voltage continuous mining machines in a room-and-pillar mine layout.

Existing regulation 30 CFR 75.1002, Installation of electric equipment and conductors; permissibility, does not allow underground coal mines to use high-voltage continuous mining machines in or inby the last open cross cut. In order to allow the use of such machines in the face area of the underground coal mine, MSHA has granted PFMs.[10] The PFM process results in safety procedures that apply only to an individual mine. Once a final decision pertaining to a PFM has been issued, the governing terms and conditions contained in the decision become mandatory for the mine described in the PFM, and the Agency then monitors compliance with the terms and conditions of the granted petition. There have been 38 PFMs granted to use high-voltage continuous mining machines since 1997.

There are 26 high-voltage continuous mining machines in 11 underground coal mines that have been granted PFMs and were producing coal in 2002 and/or 2003. Of the 11 mines, 10 mines have 20 to 500 employees each and a total of 24 high-voltage continuous mining machines. The remaining one mine has more than 500 employees and 2 high-voltage continuous mining machines.

[9] *High-voltage continuous miners proven more productive,* December 8, 2003, http://www.longwalls.com/StoryView.asp?StoryID=20550

[10] MSHA's petition process allows a mine operator to request modification of an existing safety standard at a particular mine. MSHA may grant PFMs under section 101(c) of the Mine Act when the Agency determines either of the following: (1) that a mine operator has an alternative method that provides the same measure of safety protection as the existing standard; or (2) that the existing standard would result in diminished safety protection to miners.

III. BENEFITS

INTRODUCTION

The Mine Safety and Health Administration (MSHA) has determined that this proposed rule would reduce the potential for electrical-related fatalities and injuries. In this chapter the Agency reviews the technical aspects of high-voltage and low- and medium-voltage continuous mining machines in order to evaluate their relative safety characteristics. In addition, the Agency evaluates the proposed rule related to the existing regulations.

BENEFITS TO MINERS

The safeguards and protections included in the proposed rule would make the use of high-voltage continuous mining machines just as safe as low- and medium-voltage machines. The rule consists of new provisions and those from granted PFM which provide protection to miners from hazards such as electrocution, fire, and explosion. As a result of permitting the use of high-voltage machines, additional benefits such as a reduction in cable handling injuries, can be realized.

Benefits From Substituting High Voltage For Low- and Medium-Voltage

The safeguards contained in the proposed rule would protect miners by reducing potential electrical hazards. For example, a well designed high-voltage system segregates high voltages from lower voltages, has interlocked compartment covers to prevent access to energized high-voltage conductors, and has circuits designed to facilitate safer testing procedures.

Power cables are double-jacketed and include semi-conductor shielding and grounded braided metal shielding around each conductor. A cable with shielding around each power conductor is designated as a SHD-type cable. Another type of cable, the SHC-type, has a shielding over the assembly instead of around each power conductor. Existing § 75.804 requires that underground high-voltage cables be equipped with SHD-type shielding. Existing § 75.907 allows medium-voltage circuits to have either SHD- or SHC-type shielding. However, it is common to find medium-voltage circuits with SHD-type shielding.

The SHD-type is considered to be safer than the SHC-type because the SHD-type shielding surrounds each power conductor, thereby segregating power conductors. The SHD-type design eliminates the majority of high-energy short circuits that could cause a fire or a burn should a miner touch the cable. With SHD-type shielding, it is unlikely that a cable would be damaged in a manner to expose miners to the energized power conductor(s). Before this would happen, the energized conductor or strand would contact the grounded shield, causing it to trip the ground-fault protection (which cuts off power to the cable and eliminates the hazard). Therefore, the SHD-type shielding reduces the chances of a miner receiving an electrical shock from an exposed energized conductor.

Also, high-voltage systems have less ground-fault current available than do lower-voltage systems. Less current generates less heat and less damage to cable

insulation when ground faults occur. Less heat in the cable decreases the likelihood that the cable would be damaged in such a manner that a miner could be shocked or burned by touching an exposed power conductor. Further, more sensitive ground-fault relays are used with high-voltage systems. These relays respond to 0.125 amperes instead of 10 to 15 amperes on lower-voltage systems. Thus, the potential shock hazard to miners is lower.

Furthermore, the introduction of higher horsepower continuous mining machines necessitates the use of larger motors to drive such machines. When larger motors are used to power lower voltage machines, voltage regulation problems (voltage fluctuations) occur and reduce the output torque produced by the motor. Reduced torque causes the motor to slow down and draw more current. Increased current leads to overheating of the motor and/or the cable. Using a higher voltage power for the same size motor improves output torque, which lowers current requirements and, thus, reduces the probability of motor failure due to overheating. Reducing current by using higher voltage also decreases heat build-up in the cable, thereby diminishing the danger of cable overheating. In addition to the potential for high voltage to reduce equipment failure, there is also an improved ability to start motors when using higher voltages. These benefits also help increase equipment longevity and reduce repair and maintenance downtime.

Smaller cables can be used when high voltage replaces low- and medium-voltages. Reduced power cable size and weight decreases the risk of sprains and strains resulting from handling power cables during installation or movement of continuous mining machines. Table III-1 shows miners' sprain and strain injuries from moving or lifting trailing cables that are attached to mining equipment.[11] Table III-1 shows, that over a five year period, there were over 80 sprain and strain injuries per year, and over 3,100 associated days lost per year. In 2002, there were 88 injuries and 5,280 days lost from work. On average, 68 percent of injuries per year are back injuries. The smaller cables associated with the use of high-voltage continuous mining equipment can help reduce injuries caused by moving or handling cables attached to mining equipment.

[11] Table III-1 does not capture all sprain and strain injuries from handling power cables of mining equipment. A short narrative explaining the injury accompanies each miner injury on file with MSHA. To obtain miners' sprain and strain injuries from handling cable attached to mining equipment, we conducted a search by selecting all narratives containing the words "miner cable." If the narrative did not contain these two words, then the injury was not chosen. There are miners' sprain and strain injury reports that involve handling of cables from mining equipment not captured in the search because the narrative did not use the search words, or the search words were inadvertently misspelled in the description of the injury.

Table III-1: Miners' Strains and Sprains Injuries from Handling Cables That are Attached to Mining Equipment [a]

Year	No. of Strains and Sprains			No. of Days Lost From Work		
	Non-Back Injuries [b]	Back Injuries	Total Injuries	Non-Back Injuries [b]	Back Injuries	Total Injuries
2002	23	65	88	1,498	3,782	5,280
2001	33	79	112	1,603	4,047	5,650
2000	26	62	88	659	2,509	3,168
1999	47	68	115	1,655	2,490	4,145
1998	37	73	110	1,131	2,466	3,597

[a] Data Run performed by MSHA's Office of Injury and Employment Information.

[b] Non-back injuries are injuries to other body parts, such as, neck, shoulder, hip, etc...

Benefits From New Electrical Procedures

Proposed §75.825(f) concerns power centers that supply power to high-voltage continuous mining machines and would require at least two interlock switches to be installed on the cover or removable barrier of any compartment containing high-voltage conductors or parts. Currently a second interlock switch is not required in the granted PFMs. The Agency's experience with such switches has revealed that they may stick and not operate effectively after exposure to the mine environment. MSHA believes that at least two switches coupled with the required maintenance under existing 30 CFR §75.512 would provide the necessary protection to miners by ensuring that the high-voltage circuits are de-energized whenever a cover is removed. These switches would cause the high-voltage circuits to be de-energized prior to miners entering the compartments containing such circuits. The second interlock switch would give the miner added protection from accidental contact with energized circuits.

Proposed §75.828(b) requires that the trailing cable be de-energized prior to being pulled by equipment other than the mining machine and that cable manufacturers' pulling procedures be followed. This requirement is not in granted PFMs. Cable manufacturers' recommendations usually include: the proper application of a rope or sling to pull the cable and pulling procedures that do not violate the minimum bending diameter, maximum length of trailing cable that can be safely pulled, and the number of corners that can be pulled around. The purpose of this requirement is to prevent damage to the cable. For example, when pulling cables with ropes, if a loop smaller than the minimum bending diameters for the size of the trailing cables being pulled is created, the cable can be damaged. Proper pulling procedures will minimize cable damage and protect miners against shock hazards.

Proposed §75.829(a)(2) requires that the continuous mining machine not be used to mine or cut coal while being trammed from section-to-section or in or out of the mine. This requirement is only in half of the granted PFMs. Mining or cutting while the

machine is powered by other power sources could present a safety hazard. Typically, these power sources are not of sufficient size to power all motors on the continuous mining machine for mining or cutting purposes. Paragraph (a)(4) of the same section requires that when using an on-board step-up transformer or a diesel-generator set, as permitted in proposed paragraphs (c)(2) and (c)(3), respectively, of proposed §75.829, the energized high-voltage cable needs to be secured on-board the mining machine. This requirement is not in the granted PFMs. The purpose of this requirement is to prevent the miner from handling energized cables and to minimize cable damage when the equipment is being trammed.

Proposed §75.829(b) requires that ground-fault and ground-wire monitor tests be conducted on the power sources specified in paragraph (c) of this section prior to moving the continuous mining machine. With one exception, this requirement is absent in granted PFMs. The ground-fault test will verify that the circuit is de-energized when a ground-fault condition exists. Manufacturers of power centers provide circuitry that allows testing to be conducted without subjecting the power system to an actual ground-fault condition. The ground-wire monitor test is used to verify that the circuit will be de-energized if the ground-check or grounding circuit is opened. Ground-wire monitor manufacturers provide a built-in test switch for this purpose. The combination of these two tests would protect miners from shock hazards should a fault condition occur.

Wearing properly rated gloves when handling energized trailing cables of mining equipment can help prevent electrocutions. Proposed §75.828(a) requires miners to wear properly-rated rubber insulating gloves and specifies the type of glove to be used when handling energized high-voltage trailing cables. The glove requirements of proposed §75.828(a) are also required in granted PFMs. However, concerning the handling of trailing cables on low- or medium-voltage mining equipment, existing §75.1720(c) only requires that gloves be worn when it is believed that handling materials or performing work might cause injury to the hands. In addition, existing §75.1720(c) does not mention the types of glove to be used.

The proposed rule specifies the proper type of gloves and how they must be maintained. Proposed §75.833(c) would require the rubber glove portion of the glove to be air tested at the beginning of each shift to ensure its effectiveness. Proposed §75.833(d) would require each leather protector and rubber insulating glove to be visually examined before each use for sign of damage or defects. Proposed §75.833(e) would require that damaged rubber gloves be removed from the underground area of the mine or be destroyed. Leather protectors would be required to be maintained in good condition or replaced. Proposed §75.833(f) would require that insulating gloves be electrically tested every 30 days to determine any damage or defects. Therefore, proposed §75.833 would ensure the reliability of high-voltage rubber insulating gloves to protect miners against shocks while handling cables.

CONCLUSION

MSHA has determined that the proposed rule would improve the safety and health of miners in underground coal mines. MSHA anticipates that the proposed rule could reduce the potential for electrical-related injuries and other injuries from handling trailing cables, such as sprains and strains. This enhanced protection for the miner would result

from the safety features required when using high-voltage continuous mining equipment as described above.

IV. COMPLIANCE COSTS

INTRODUCTION

Absent this rule, an underground coal mine operator must apply and obtain a PFM to use a high-voltage continuous mining machine. As a result of this rule, mine operators would no longer need to apply for a PFM to use a high-voltage continuous mining machine.

Many provisions of this proposed rule have been derived directly from granted PFMs. There are no compliance costs for provisions crafted from granted PFMs because, absent the proposed rule, the mine operator would still need to comply with such provisions when the operator obtained a PFM to use a high-voltage continuous mining machine. Nearly all of the provisions of the proposed rule are in current PFMs. However, there are instances where provisions of the proposed rule include requirements that were not in all the granted PFMs, and these requirements would impose compliance costs on some mine operators with granted PFMs. The compliance costs for such provisions are estimated in this chapter.

This proposed rule also results in cost savings for mine operators because, when the rule becomes final, mine operators will no longer have to file for a PFM to use a high-voltage continuous mining machine. Thus, mine operators would incur cost savings related to the time and expense of filing a PFM. In addition, in a certain situation, there would be major production savings due to the mine operator being able to use a high-voltage continuous mining machine sooner because of the elimination of the petition process. These production savings are also estimated in this chapter.

METHODOLOGY

For this proposed rule, MSHA estimates the following costs (or savings): (1) one-time or intermittent costs; (2) annual costs; and (3) annualized costs. One-time costs are those that are incurred once, usually in the first year of compliance and do not recur annually. Intermittent costs are those costs that may recur from time to time, but not annually. Capital expenditures, such as the cost of purchasing compliance equipment, are an example of one-time or intermittent costs. Annual costs are costs that normally occur every year. Two examples of annual costs are maintenance costs and recordkeeping costs. Annualized costs are one-time and intermittent costs that are allocated over the economic life of the investment using a specified interest (or discount) rate. For this preliminary regulatory economic analysis (PREA), MSHA has used a (real) discount rate of 7 percent, as recommended by the Office of Management and Budget (OMB) using the formula:

$$a = (i * (1 + i)^n) / ((1 + i)^n - 1),$$

Where (a) equals the annualization factor, (i) equals the annual discount rate, and (n) equals the economic life of the non-annual recurring investment.

The costs and savings in this economic analysis were developed utilizing information received from MSHA's District Offices and Coal Mine Safety Division, industry representatives, and manufacturers of continuous mining machines. All costs and cost savings are presented in 2002 dollars. MSHA used coal mine hourly wage rates of $29.73 for a mine electrician, $28.66 for a miner, and $58.96 for a mine supervisor.[12] The wage rates include benefits such as social security, unemployment insurance, and workers' compensation, but they do not reflect shift differentials or overtime pay. For convenience, we refer to miner "compensation" in this PREA as "wages," where that term is understood to include benefits. The baseline used for estimating annual costs and savings is the current requirements contained in granted PFMs to use high-voltage continuous mining machines, and current industry practices. This baseline is compared to the rule's requirements to determine annual costs and savings.

Although the rule does apply to mine operators with fewer than 20 employees that choose to use high-voltage continuous mining machines, MSHA's experience is that no underground coal mine operator with fewer than 20 employees has ever requested a PFM to use high-voltage continuous mining machines. Absent this rulemaking, MSHA does not expect any PFMs to use high-voltage continuous mining machines from mine operators having fewer than 20 employees. Therefore, MSHA has assumed that the economic impact of the proposed rule is limited to underground coal mine operators having 20 to 500 employees, and those having more than 500 employees.

SUMMARY OF COMPLIANCE COSTS

This proposed rule would result in estimated yearly net compliance cost savings of approximately $1.40 million.

For mine operators with 20 to 500 employees there would be yearly compliance costs of about $30,500 and yearly net compliance cost savings of $1.433 million, which would result in yearly net cost savings of approximately $1.40 million. One mine operator with more than 500 employees who is currently using high-voltage continuous mining machines would incur yearly compliance costs of about $61.

Table IV-1 shows, by size category, a summary of the compliance costs and cost savings for mine operators to implement the proposed rule.

[12] Hourly wage rates are from Western Mine Engineering Inc., *U.S. Coal Mine Salaries, Wages, & Benefits – 2002 Survey Results*, pg. 9.

Table IV-1: Summary of Compliance Costs and Cost Savings

Detail	20 to 500 Emp.				>500 Emp.				Total			
	First Year Dollars	Annual-ized Dollars	Annual Dollars	Yearly Dollars [a]	First Year Dollars	Annual-ized Dollars	Annual Dollars	Yearly Dollars [a]	First Year Dollars	Annual-ized Dollars	Annual Dollars	Yearly Dollars [a]
Cost Savings [b]	$0	$0	$1,433,835	$1,433,835	$0	$0	$0	$0	$0	$0	$1,433,835	$1,433,835
Costs [c]	$1,254	$233	$30,304	$30,537	$104	$19	$42	$61	$1,358	$253	$30,345	$30,598
Net Savings [d]	($1,254)	($233)	$1,403,531	$1,403,298	($104)	($19)	($42)	($61)	($1,358)	($253)	$1,403,490	$1,403,237

[a] Yearly Dollars = Annualized Dollars + Annual Dollars.

[b] Source: Table IV-4.

[c] Source: Table IV-11.

[d] Net compliance costs appear in parentheses.

PROPOSED COMPLIANCE COST SAVINGS

Cost Savings Related to Filing a Petition

As a result of this proposed rule, underground coal mine operators would no longer need to file for a PFM to use high-voltage continuous mining machines in their mines. Therefore, this proposed rule would provide a cost savings to those mine operators that, absent the rule, would have had to file a PFM. Based on MSHA technical staff information, it is estimated to cost approximately $1,000 for a mine operator to prepare and file a PFM to use a high-voltage continuous mining machine. There have been, on average, approximately 5 PFMs filed annually since the first PFM to use a high-voltage continuous mining machine was filed in 1996. All of the mines, except one, that have filed for a PFM to use high-voltage continuous mining machines have 20 to 500 employees. Therefore, MSHA assumes that, annually, 5 mines, having 20 to 500 employees, would file petitions to use high-voltage continuous mining equipment. Table IV-2 shows, by size category, the compliance cost savings associated with preparing and filing a petition for modification.

Table IV-2: Mine Operator Cost savings Associated With No Longer Needing to File a PFM

Emp. Size Category	Annual No. of PFMs	Cost per PFM	Annual Cost Savings
20-500	5	$1,000	$5,000
>500	0	$1,000	$0
Total	5		$5,000

Cost Savings Associated With Accelerated Production

The PFMs granted by MSHA are for a mine operator to use high-voltage continuous mining machines in a specific mine. However, there are occasions where a mine operator has a PFM to use a high-voltage continuous mining machine in Mine (A), but after using the machine in Mine (A) for a period of time, the operator decides, due to production problems or other economic reasons, that it would be profitable to switch the high-voltage continuous mining machine from Mine (A) to Mine (B) that does not currently have a PFM to use a high-voltage continuous mining machine (i.e., is using a low- or medium-voltage continuous mining machine instead). Under current regulations, the operator would need to obtain another PFM for Mine (B) before the high-voltage continuous mining machine could be moved. Usually, mine operators can anticipate when equipment needs to be switched from one mine to another and can synchronize the granting of a PFM with the movement of the equipment. However, if a mine operator cannot correctly anticipate the desired movement of equipment from one mine to another, then the PFM process might cause the mine operator a costly production delay. In this situation, the operator would have to continue to use the low- or medium-voltage continuous mining machine until a PFM to use a high-voltage continuous mining machine is granted for Mine (B).

Absent the rule, MSHA estimates that, once a year, one mine operator would not be able to anticipate ahead of time the movement of high-voltage mining equipment from one mine to another with the granting of a PFM. The result would be a delay in increased production. Currently, on average, it takes an operator about 6 months from the time of filing to be granted a PFM, or 120 workdays (240 workdays per year / 2). The affected mine is assumed to operate 2 production shifts and have 20 to 500 employees. Based on information from MSHA technical staff, there is a production increase of 350 tons of clean coal per shift (or 700 tons for two shifts) when replacing a medium-voltage with a high-voltage continuous mining machine.

However, the delay in the increased production is not lost. MSHA assumes that the operator will extract the delayed increased production at the end of the life of the mine (which MSHA assumes to be 15 years). The value, in today's dollars, of a dollar of production 15 years from now is equal to one dollar multiplied by $(1/1.07)^{15}$, or 0.36244602. So the value of the avoided delayed production is equal to the values of the avoided delayed production today minus its present value if produced in 15 years.[13]

Table IV-3 shows, by size category, the savings associated with increased production resulting from not having to delay replacing a medium- voltage with a high-voltage continuous mining machine.

[13] That is, for P equal to current additional production, the net revenue effect of accelerated production is equal to (1 – 0.36244602) multiplied by P.

Table IV-3: Mine Operator Revenue Savings Associated With Accelerated Production

Emp. Size Category	Annual No. of Mines Affected	No. of Days of Delaying Increased Production [a]	Tons Lost per Day [b]	Underground Coal Price (per ton)	Annual Revenue Savings
20-500	1	120	700	$26.68	$2,241,120
>500	0	120	700	$26.68	$0
Total Costs	1				$2,241,120
Present Value of Revenue [c]					$812,285
Net Revenue Savings [d]					$1,428,835

[a] 120 workdays = 240 workdays per year divided by 2.

[b] 700 tons per day = 350 tons per shift (the difference between medium and high-voltage continuous mining machines) x 2 shifts per day.

[c] $812,285 = $2,241,120 x 0.36244602, which is the present value factor based on a 15 year life of the mine.

[d] Net Revenue Savings = Total Revenue minus Net Present Value of Revenue.

Table IV-3 shows, by size category, the summary of the savings to mine operators arising from the proposed high-voltage continuous mining machine rulemaking.

Table IV-4: Summary of Savings

Savings Detail	Emp. 20 to 500				Emp. >500				Total			
	First Year Savings	Annual-ized Savings	Annual Savings	Yearly Savings [a]	First Year Savings	Annual-ized Savings	Annual Savings	Yearly Savings [a]	First Year Savings	Annual-ized Savings	Annual Savings	Yearly Savings [a]
Filed PFM	$0	$0	$5,000	$5,000	$0	$0	$0	$0	$0	$0	$5,000	$5,000
Accelerated Production	$0	$0	$1,428,835	$1,428,835	$0	$0	$0	$0	$0	$0	$1,428,835	$1,428,835
Total Savings	$0	$0	$1,433,835	$1,433,835	$0	$0	$0	$0	$0	$0	$1,433,835	$1,433,835

[a] Yearly Savings = Annualized Savings + Annual Savings.

SECTION-BY-SECTION DISCUSSION OF COMPLIANCE COSTS

PART 18 - ELECTRIC MOTOR-DRIVEN MINE EQUIPMENT AND ACCESSORIES

Proposed §18.54 sets forth design, construction, and performance specifications for applicants seeking approval for high-voltage continuous mining machines to use in underground coal mines.[14] There are no compliance costs or savings associated with these requirements because manufacturers are currently complying with all of the requirements set forth in proposed §18.54.

PART 75, SUBPART I – UNDERGROUND HIGH-VOLTAGE DISTRIBUTION

Proposed §75.825(f)

With regard to power centers that are supplying power to high-voltage continuous mining machines, proposed §75.825(f) requires that each cover or removable barrier providing access to energized high-voltage conductors or parts be equipped with at least two interlock switches. This requirement is not clearly defined in the granted PFMs. Currently, all power centers in underground coal mines have at least one interlocking device. MSHA estimates that roughly half of all power centers have more than one interlocking device. MSHA further estimates that an interlocking device, costing approximately $45 and lasting seven years, takes a mine electrician, earning $29.73 per hour, two hours to install.

There are 26 high-voltage continuous mining machines in 11 mines that have granted PFMs and were producing coal in 2002 and/or 2003. Of the 11 mines, 10 mines have 20 to 500 employees each and a total of 24 high-voltage continuous mining machines. One mine has more than 500 employees and 2 high-voltage continuous mining machines. MSHA assumes that there is a power center for each high-voltage continuous mining machine. Also, MSHA assumes that half of the power centers associated with the high-voltage continuous mining machines (12 power centers in mines employing 20 to 500 workers and one power center in the mine employing more than 500 workers) would need to install a second interlocking device. Table IV-5 shows, by size category, the annualized first year compliance cost to install an interlock device for mine operators that operate under a granted PFM.

14 Section 18.54 also applies to gassy underground M/NM mines. However, such mines are not impacted by this rule.

Table IV-5. Annualized First Year Cost For Mine Operators With Granted Petitons For Modifications to Install Interlock Device Required by Section 75.825(f)

Emp. Size Category	No. of Power Centers Needing Interlock Device	Cost of Device	Time to Install Device (in hrs.)	Mine Electrician Wage Rate (per hr.)	First Year Costs[a]	First Year Costs Annualized[b]
20-500	12	$45	2	$29.73	$ 1,254	$ 233
>500	1	$45	2	$29.73	$ 104	$ 19
Total	13	$45	2	$29.73	$ 1,358	$ 253

[a] First Year Costs = Number of Power Centers Needing Interlock Device x (Cost to Install Device per Power Center + (Time to Install Device x Mine Electrician Wage Rate per hour)).

[b] First Year Costs Annualized = First Year Costs x Annualization Factor of 0.186, corresponding to a seven-year life of an interlock device.

On average, there have also been approximately 5 PFMs granted per year to use a high-voltage continuous mining machine. However, currently there are only 11 mines that produced coal in 2002 and/or 2003 that used high-voltage continuous mining machines (an average of approximately 2 additional mines per year since 1997, when PFMs were first granted). There are several reasons why the number of mines currently using high-voltage continuous mining machines is significantly less than the number of PFMs that have been granted to use such equipment since 1997. First, a PFM is mine-specific. A company may have a granted PFM to use a high-voltage continuous mining machine in mine (A). After some time the company may want to move the machine to mine (B). Before the movement of equipment could occur, a new PFM must be obtained for mine (B). Second, in some cases the company may have been granted a PFM and then decided not to open the mine or to purchase the machine. Third, even though the mine has a granted PFM and a high-voltage continuous mining machine, for economic reasons the mine may have since ceased operation. The Agency assumes that, on average, approximately 5 mines annually would have been granted a PFM; of these, 3 mines would have purchased and used a high-voltage continuous mining machine and 2 mines would not have. The Agency further assumes that each year one company with a PFM and a working high-voltage continuous mining machine will cease operations at the approved mine. Thus, a net of 2 additional mines annually would chose to produce coal using high-voltage continuous mining machines. There are 26 high-voltage continuous mining machines in the 11 mines noted above (an average of approximately two machines per mine). MSHA thus assumes that each of the 2 additional mines annually would have two high-voltage continuous mining machines. Furthermore, 10 of the 11 mines noted above have 20 to 500 employees (and one mine has more than 500

employees). MSHA assumes that the 2 additional mines annually that would choose to add high-voltage mining machines have 20 to 500 employees.

With respect to proposed §75.825(f), MSHA assumes that of the 3 mines that would choose to use high-voltage continuous mining machines annually, half (1.5 mines) would need to install a second interlocking device on two power centers connected to the two machines. Assuming 2 high-voltage mining machines per mine, then 3 interlocking devices would need to be installed in the 1.5 mines. Table IV-6 shows, by size category, the annual compliance costs to install an interlock device for mine operators that chose to add a high-voltage continuous mining machine.

Table IV-6. Annual Cost For New Mine Operators
to Install Interlock Device
Required by Section 75.825(f)

Emp. Size Category	No. of Power Centers Needing Interlock Device	Cost of Device	Time to Install Device (in hrs.)	Mine Electrician Wage Rate (per hr.)	Annual Costs[a]
20-500	3	$45	2	$29.73	$ 313
>500	0	$45	2	$29.73	$ -
Total	0	$45	2	$29.73	$ 313

[a] Annual Costs = Number of Power Centers Needing Interlock Device x (Cost to Install Device per Power Center + (Time to Install Device x Mine Electrician Wage Rate per hour)).

Proposed §75.829(b)

Proposed §75.829(b) states that prior to tramming the continuous mining machine, the power sources must pass a functional test of the ground-fault and ground-wire monitor circuits. A record of each test must be made. This provision was not previously included in granted petitions for high-voltage continuous mining machines, and is therefore, a new cost for mine operators with granted petitions and for mine operators that would use high-voltage continuous mining machines in the future. The Agency estimates that the tests would be conducted once every 6 months (or twice a year) per high-voltage continuous mining machine. The tests, conducted by a mine electrician earning $29.73 per hour, are estimated to take a total of 0.25 hours (15 minutes) per machine, and another 6 minutes (0.1 hours) per machine to make a record. Therefore, a total of 0.35 hours is needed every six months to conduct the tests and make a record per machine.

Concerning mines with granted PFMs, 24 high-voltage continuous mining machines are in mines having 20 to 500 employees, and 2 high-voltage continuous mining machines are in the 1 mine that has more than 500 workers. In addition, a net increase of 2 additional mine operators, having 20 to 500 employees, are estimated to use 4 high-voltage continuous mining machines annually (2 machines per mine). Table IV-7 shows the annualized compliance costs to test ground-fault and ground-wire monitor circuits for mine operators with 20 to 500 employees. Table IV-8 shows the same type of annual compliance costs for the 1 mine operator with more than 500 employees.

Table IV-7: Annualized Costs to Test Ground-Fault and Ground-Wire Monitor Circuits Required by Section 75.829(b) (For Mine Operators With 20 to 500 Employees)

a	b	c	d	e	f	g
Years	No. of HVCM Machines [a]	Costs to Conduct Tests and Make Record per Machine [b]	No. of Times Tests & Record Done Annually	Annual Costs (b x c x d)	Present Value Factor [c]	Present Value of Costs (e x f)
1	28	$10.41	2	$583	1	$583
2	32	$10.41	2	$666	0.934579	$622
3	36	$10.41	2	$749	0.873439	$654
4	40	$10.41	2	$832	0.816298	$680
5	44	$10.41	2	$916	0.762895	$699
6	48	$10.41	2	$999	0.712986	$712
7	52	$10.41	2	$1,082	0.666342	$721
8	56	$10.41	2	$1,165	0.622750	$726
9	60	$10.41	2	$1,249	0.582009	$727
10	64	$10.41	2	$1,332	0.543934	$724
Total Costs						$6,848
Annualized Net Costs [d]						$479

[a] 28 HVCMs in first year = 24 HVCMs in 10 mines having 20 to 500 employees + 4 HVCMs in 2 mines having 20 to 500 employees. Every year thereafter a net of 4 HVCMs in 2 mines having 20 to 500 employees are added. Thus, for example 32 HVCMs in year 2 = 24 existing HVCMs + 4 HVCMs from the first year + 4 HVCMs from the second year.

[b] $10.41 = ($29.73 mine electrician hourly wage x (0.25 hrs. to conduct tests + 0.1 hrs. to make record)).

[c] Present Value Factor beginning in year 2 = $1/(1.07)^{year\ -1}$.

[d] Annualized Net Costs = Total Costs x 0.07.

Table IV-8: Annual Cost to Test Ground-Fault and Ground-Wire Monitor Circuits Required by Section 75.829(b) (For Mine Operator With More Than 500 Workers)

No. of HVCM Machines	Costs to Conduct Tests and Make Record per Machine [a]	No. of Times Tests & Record Done Annually	Annual Costs
2	$10.41	2	$42

[a] $10.41 from Table IV-7.

Proposed §75.832(d)(2)

Proposed §75.832(d)(2) requires that, at the beginning of each production shift, a responsible person designated by the mine operator must de-energize the high-voltage trailing cable and visually inspect for damage the outer jacket from the continuous mining machine when the machine is used in any of the following locations: (i) to the last open crosscut; (ii) within 150 feet of the working place during retreat or second mining; or (iii) up to 150 feet of the continuous mining machine when the machine is used in outby areas.

The requirements of proposed §75.832(d)(2) are contained in the most recent PFMs granted by MSHA. Therefore, it is not assumed to be a compliance cost of the rule for mine operators that would choose to use a high-voltage continuous mining machines in the future, because it is expected that absent the rule these requirements would be in any future granted PFM. However, it would be a compliance cost of the rule for those mine operators that do not currently have such a provision in their granted PFMs.

Two of the 11 mines with granted PFM that are currently producing coal using high-voltage continuous mining machines are already obligated to follow the requirements of proposed §75.832(d)(2) in their PFMs. Of these 2 mines, 1 mine has 20 to 500 employees, while the other has more than 500 employees. These 2 mines account for 10 of the 26 high-voltage continuous mining machines in the 11 mines. Therefore, the 9 remaining mines having 20 to 500 employees and 16 high-voltage continuous mining machines would incur compliance costs as a result of proposed §75.832(d)(2).

Based on information from MSHA's technical staff, the affected mines operate 2 production shifts per day and work about 240 days per year. The visual inspection required under proposed §75.832(d)(2) and performed by a responsible person (generally, the machine operator), estimated to earn $28.66 per hour, must occur every production shift. The inspection is estimated to take 0.1 hours (6 minutes). Table IV-9 shows, by size category, the annual compliance for mine operators to perform the inspection required under proposed §75.832(d)(2).

Table IV-9: Annual Costs for Certain Mine Operators to to Conduct Inspection Required by Section 75.832(d)(2)

Emp. Size Category	No. of Machines	No. of Inspections to be Performed	No. of Workdays per Year	Hours to Perform Inspection	Machine Operator Hourly Wage Rate	Annual Costs [a]
20 to 500	16	2	240	0.1	$28.66	$22,011
>500	0	2	240	0.1	$28.66	$0
Total	16					$22,011

[a] Annual Costs = No. of Machines x No. of Inspections to be Performed x No. of Workdays per Year x Hours to Perform Inspection x Mine Electrician Hourly Wage Rate.

Proposed §75.833

Proposed §75.833(a) requires that each mine operator make available, to miners handling energized high-voltage trailing cables, high-voltage insulating gloves. The requirements of proposed §75.833(a) are incorporated in the most recent granted PFMs and would be required in any new PFM. Therefore, this provision would not be a compliance costs for mine operators choosing to use a high-voltage continuous mining machine in the future. However, 2 of the 11 mines that have a granted PFM and are currently producing coal with high-voltage continuous mining machines do not have the proposed §75.833(a) requirements in their granted PFMs. Therefore, this provision would impose compliance costs for these two mine operators that have 20 to 500 employees and 3 high-voltage continuous mining machines.

The proper type of gloves includes a pair of rubber and a pair of leather gloves. The rubber gloves are put on first; then the leather gloves are put over the rubber gloves in order to provide protection. The rubber gloves cost approximately $70 per pair and, on average, last for about six months. The leather gloves cost approximately $30 and, on average, last for about one month. On average, then, one person would need two pairs of rubber gloves and 12 pairs of leather gloves per year. It is estimated that, on each section that has a high-voltage continuous mining machine, 5 pairs of rubber and leather gloves would be needed (one pair each for the miner operating the continuous mining machine, continuous mining machine helper, roof bolter, roof bolter helper, and another worker on the section). All persons working on the section may need, at times, to handle the cables even though they do not directly work on the continuous mining machine.

Table IV-10 shows, by size category, the annual compliance cost for mine operators to pay for gloves required by proposed §75.833(a).

Table IV-10: Costs for Gloves Required by Section 75.833(a)

Emp. Size Category	No. of Sections	No. of Pairs of Gloves Needed per Section	Annual Gloves Costs for One Worker [a]	Annual Costs for Gloves [b]
20 to 500	3	5	$500	$7,500
>500	0	5	$500	$0
Total	3			

[a] $500 = ($70 for cost of rubber gloves x 2 pairs of rubber gloves needed per year) + ($30 for cost of leather gloves x 12 leather gloves needed per year).

[b] Annual Costs for Gloves = No. of sections x No. of Pairs of Gloves Needed per Section x Annual Gloves Costs for One Worker.

Table IV-11 shows, by size category, a summary of the compliance costs of the proposed rule.

Table IV-11: Summary of Compliance Costs

Proposed Section	Emp. 20 to 500				Emp. >500				Total			
	First Year Costs	Annual-ized Costs	Annual Costs	Yearly Costs [a]	First Year Costs	Annual-ized Costs	Annual Costs	Yearly Costs [a]	First Year Costs	Annual-ized Costs	Annual Costs	Yearly Costs [a]
75.825(f)	$ 1,254	$ 233	$ 313	$ 547	$ 104	$ 19	$0	$ 19	$ 1,358	$ 253	$ 313	$ 566
75.829(b)	$0	$0	$479	$ 479	$0	$0	$42	$ 42	$0	$0	$ 521	$ 521
75.832(d)(2)	$0	$0	$22,011	$ 22,011	$0	$0	$0	$0	$0	$0	$ 22,011	$ 22,011
75.833(a)	$0	$0	$7,500	$ 7,500	$0	$0	$0	$0	$0	$0	$ 7,500	$ 7,500
Total Costs	$ 1,254	$ 233	$ 30,304	$ 30,537	$ 104	$ 19	$ 42	$ 61	$ 1,358	$ 253	$ 30,345	$ 30,598

[a] Yearly Costs = Annualized Costs + Annual Costs.

FEASIBILITY

MSHA has concluded that the requirements of the proposed rule are technologically and economically feasible. Underground coal mine operators have been currently operating under most of the provisions of the proposed rule through granted PFMs. Any requirements in this proposed rule that are different from those currently

being followed in the granted PFMs will not make the implementation of the rule technologically or economically infeasible for underground coal mine operators who choose to use high-voltage continuous mining machines for extracting coal.

MSHA has traditionally used a revenue screening test—whether the yearly compliance costs of a regulation exceed one percent of revenues, or are negative (i.e., provide net cost savings) to determine whether the regulation might possibly be economically infeasible for industry to comply with.[15] As previously estimated in this chapter, the underground coal mining industry would incur a net annual compliance cost savings of approximately $1.40 million. The fact that the proposed rule would render a net cost savings to the underground coal mining industry (whose yearly revenues are about $9.4 billion) provides convincing evidence that the rule is economically feasible.

[15] The Agency recognizes the theoretical usefulness of evaluating the effects of a regulation on profits (rater than on revenues). MSHA is currently investigating the future use of profitability analysis to evaluate the economic feasibility of its rule. However, given that the yearly costs of the rule are negative, MSHA is confident that, given the selection and use of any reasonable profitability test, the rule would be found to be economically feasible.

V. REGULATORY FLEXIBILITY CERTIFICATION

INTRODUCTION

Pursuant to the Regulatory Flexibility Act of 1980 as amended, MSHA has analyzed the impact of the proposed rule on small businesses. Further, MSHA has made a determination with respect to whether or not the Agency can certify that the rule would not have a significant economic impact on a substantial number of small entities that are covered by this rulemaking. Under the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act (RFA), MSHA must include in the rule a factual basis for this certification. If the proposed rule has a significant economic impact on a substantial number of small entities, then the Agency must develop an initial regulatory flexibility analysis.

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, hence, 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 (13 CFR 121.201). Almost all of the coal mines affected by these rulemakings fall into this category. Consequently, they can be viewed as sharing the special regulatory concerns which the RFA was designed to address.

Traditionally, the Agency has also looked at the impacts of its rules on a subset of mines with 500 or fewer employees—those with fewer than 20 employees, which the mining community refers to as "small mines." These small mines differ from larger mines not only in the number of employees, but also, among other things, in economies of scale in material produced, in the type and amount of production equipment, and in supply inventory. Therefore, their costs of complying with MSHA rules and the impact of MSHA rules on them will also tend to be different. It is for this reason that "small mines," as traditionally defined by the mining community, are of special concern to MSHA.

Although the proposed rule does apply to underground coal mine operators with fewer than 20 employees that choose to use high-voltage continuous mining machines, the Agency experience is that no underground coal mine operator with fewer than 20 employees has ever requested a PFM to use high-voltage continuous mining machines. Absent this rulemaking, MSHA does not expect any PFMs to use high-voltage continuous mining machines from mine operators having fewer than 20 employees. However, this analysis still complies with the legal requirements of the RFA for an analysis of the impacts on "small entities" by examining small entities with 500 or fewer employees. MSHA concludes that it can certify that the rule would not have a significant

economic impact on a substantial number of small entities that are covered by these rulemakings.

FACTUAL BASIS FOR CERTIFICATION

General Approach

The Agency's analysis of impacts on "small entities" begins with a "screening" analysis. The screening compares the estimated compliance costs of a rule for small entities in the sector affected by the rule to the estimated revenues for those small entities. When estimated compliance costs are less than 1 percent of the estimated revenues, the Agency believes it is generally appropriate to conclude that there is no significant economic impact on a substantial number of small entities. When estimated compliance costs equal or exceed 1 percent of revenues, it tends to indicate that further analysis may be warranted.[16]

Derivation of Costs and Revenues

The compliance costs noted in this chapter were previously presented in Chapter IV of this document along with an explanation of how they were derived. All underground coal mine operators are covered by the rule. In determining revenues for underground coal mine operators, MSHA multiplied their production data (in tons) by the 2002 price per ton of the commodity ($26.68 per ton for underground production). The production data were obtained from MSHA's Program Evaluation and Information Resources (PEIR) data,[17] and the price estimates were obtained from the Department of Energy.[18]

Results of Screening Analysis

The proposed rule applies to all underground coal mine operators. Table V-1 shows that the estimated yearly cost savings of the proposed rule as a percentage of yearly revenues is about 0.02 percent for underground coal operators with 500 or fewer employees.

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[16] MSHA has traditionally used a revenue screening test—whether the yearly costs of a regulation equal or exceed 1 percent of revenues—to determine whether the regulation might possibly have a significant economic impact on a substantial number of small entities. The Agency recognizes the theoretical usefulness of evaluating the effects of a regulation on profits (rather than on revenues). MSHA is currently investigating the future use of profitability analysis to evaluate whether its rules will have a significant impact on a substantial number of small entities. However, given that the yearly net cost savings of the proposed rule are less than 0.02 percent of yearly underground coal industry revenues for small mines with 500 or fewer employees, MSHA is confident that, given the selection and use of any reasonable profitability test, the proposed rule would not have a significant economic effect on a substantial number of small entities.

[17] U. S. Department of Labor, Mine safety and Health Administration, Program Evaluation and Information Resources, Calendar Year 2002 data.

[18] U.S. Department of Energy, Energy Information Administration, Annual Coal Report 2002, Table 28 p. 52, DOE/EIA-0584(2002).

Table V-1: Estimated Compliance Cost Savings of Rule
Relative to Yearly Revenues For
Underground Coal Mine Operators
(dollars in millions) [a]

Mine Size	Rule Yearly Cost Savings	Underground Coal Revenues	Savings as Percentage of Revenues
≤500 Emp.	$1.40	$8,300	0.02%

[a] Data for revenues derived from: U.S. Department of Labor, Mine Safety and Health Administration, 2002 Program Evaluation and Information Resources; and U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002* , Table 28, p. 52, DOE/EIA-0584(2002).

Using the SBA definition of small mines, as those with 500 or fewer employees, the estimated compliance cost savings of the proposed rule for underground coal mines are substantially less than 1 percent of their estimated revenues, well below the level suggesting that they might have a significant economic impact on a substantial number of small entities. Accordingly, MSHA has certified that the rule would not have a significant economic impact on a substantial number of small entities that are covered by the rule.

VI. OTHER REGULATORY CONSIDERATIONS

THE UNFUNDED MANDATES REFORM ACT

This proposed rule does not include any Federal mandate that may result in increased expenditures by State, local, or tribal governments, nor would it increase private sector expenditures by more than $100 million annually, nor would it significantly or uniquely affect small governments. Accordingly, the Unfunded Mandates Reform Act of 1995 requires no further agency action or analysis.

NATIONAL ENVIRONMENTAL POLICY ACT

MSHA has reviewed this proposed rule in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*), the regulations of the Council on Environmental Quality (40 U.S.C. part 1500), and the Department of Labor's NEPA procedures (29 CFR part 11). Since this proposed rule would impact safety, not health, the rule is categorically excluded from NEPA requirements because it would have no significant impact on the quality of the human environment (29 CFR § 11.10(a)(1)). Accordingly, MSHA has not conducted an environmental assessment nor provided an environmental impact statement.

ASSESSMENT OF FEDERAL REGULATIONS AND POLICIES ON FAMILIES

This proposed rule would 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 requires no further agency action, analysis, or assessment.

EXECUTIVE ORDER 12630: GOVERNMENT ACTIONS AND INTERFERENCE WITH CONSTITUTIONALLY PROTECTED PROPERTY RIGHTS

This proposed rule would not implement a policy with takings implications. Accordingly, Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights, requires no further agency action or analysis.

EXECUTIVE ORDER 12988: CIVIL JUSTICE REFORM

This proposed rule was drafted and reviewed in accordance with Executive Order 12988, Civil Justice Reform. This proposed 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. MSHA has determined that this proposed rule would meet the applicable standards provided in Section 3 of Executive Order 12988.

EXECUTIVE ORDER 13045: PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

This proposed rule would have no adverse impact on children. Accordingly, Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, requires no further agency action or analysis.

EXECUTIVE ORDER 13132: FEDERALISM

This proposed rule would not have "federalism implications," because it would 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, Federalism, requires no further agency action or analysis.

EXECUTIVE ORDER 13175: CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

This proposed rule would not have "tribal implications," because it would 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, Consultation and Coordination with Indian Tribal Governments, requires no further agency action or analysis.

EXECUTIVE ORDER 13211: ACTIONS CONCERNING REGULATIONS THAT SIGNIFICANTLY AFFECT ENERGY SUPPLY, DISTRIBUTION, OR USE

In accordance with Executive Order 13211, MSHA has reviewed this proposed rule for its impact on the supply, distribution, and use of energy. Because this proposed rule would result in yearly net cost savings to the coal mining industry, this proposed rule would neither reduce the supply of coal nor increase its price.

This proposed rule is not a "significant energy action," because it would 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, Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, requires no further agency action or analysis.

EXECUTIVE ORDER 13272: PROPER CONSIDERATION OF SMALL ENTITIES IN AGENCY RULEMAKING

In accordance with Executive Order 13272, MSHA has thoroughly reviewed this proposed rule to assess and take appropriate account of its potential impact on small businesses, small governmental jurisdictions, and small organizations. As discussed in Chapter V of this PREA, MSHA has determined and certified that this proposed rule would not have a significant economic impact on a substantial number of small entities.

VII. PAPERWORK REDUCTION ACT OF 1995

INTRODUCTION

The purpose of this chapter is to show the estimated paperwork burden hours and related costs to be borne by underground coal mine operators as a result of the proposed rule. In this chapter, burden hours and related costs are apportioned to proposed §75.829, §75.831, and §75.832.

In addition, some of the paperwork burden to operators in proposed §75.832 are already being accounted for in existing OMB paperwork package 1219-0116 (formerly OMB 1219-0067). When the high-voltage continuous miner rule becomes final, the burden in OMB paperwork package 1219-0116 will be reduced and accounted for in the paperwork package that accompanies the high-voltage continuous miner rulemaking.

Finally, as a result of this rule, mine operators would no longer need a petition for modification (PFM) of existing 30 CFR §75.1002 to use a high-voltage continuous mining machine. Existing OMB paperwork package 1219-0065 includes annual burden hours and costs related to the time it takes mine operators to prepare and file petitions with MSHA, including PFMs to use a high-voltage continuous mining machine. Therefore, mine operators burden hours and costs related to preparing and filing a PFM to use a high-voltage continuous mining machine would need to be eliminated from OMB paperwork package 1219-0065 once this rulemaking becomes final.

SUMMARY OF PAPERWORK BURDEN HOURS AND RELATED COSTS

Proposed §75.829, §75.831, and §75.832 would result in a total of 219 annual burden hours and related costs of $6,511. Of the total burden hours, mines having 20 to 500 employees account for 204 hours and $6,077, while the 1 mine with more than 500 employees affected by the proposed rule accounts for 15 hours and $434. Also, with respect to mine operators having 20 to 500 employees, there are about 84 burden hours and related costs of $4,948 that would need to be eliminated from existing OMB paperwork package 1219-0065. In addition, existing OMB paperwork package 1219-0116 would be reduced by a total of 16 burden hours and related costs of $464 (14 hours and related costs of $428 for mines having 20 to 500 employees, and 1 hour and related costs of $36 for the one mine having more than 500 employees).

Table VII-1 shows, by size category, a summary of the burden hours and costs discussed above.

Table VII-1: Summary of Annual Burden Hours and Related Costs

Section	Emp. 20 to 500		Emp. >500		Total	
	Hours	Costs	Hours	Costs	Hours	Costs
Annual Burden [a]						
75.829	20	$583	1	$42	21	$624
75.831	112	$3,330	8	$238	120	$3,568
75.832	73	$2,164	5	$155	78	$2,319
Total	204	$6,077	15	$434	219	$6,511
Eliminated Annual Burden						
Filed PFMs [b]	84	$4,948	0	$0	84	$4,948
75.800 [c]	14	$428	1	$36	16	$464

[a] Annual burden hours and costs for §75.831 were derived from granted PFMs. Annual burden hours and costs for §75.829 were not derived from any granted PFM.

[b] These annual burden hours and costs would be eliminated from existing paperwork package 1219-0065 when the rule becomes final.

[c] These annual burden and costs would be elimated from existing paperwork package 1219-0166 (formerly, 1219-0067).

Below is a discussion of how the burden hour and costs in Table VII-1 were derived.

Proposed §75.829 – Annual Burden Hours and Costs

Proposed §75.829(b) states that, prior to tramming the continuous mining machine, the power sources must pass a functional test of the ground-fault and ground-wire monitor circuits. A record of each test must be made. The Agency estimates that the tests would be conducted once every 6 months (or twice a year) per high-voltage continuous mining machine. The tests, conducted by a mine electrician earning $29.73 per hour, are estimated to take a total of 0.25 hours (15 minutes) per machine, and another 0.1 hours (6 minutes) per machine to make a record. Therefore, a total of 0.35 hours per machine is needed every six months to conduct the tests and make a record per machine.

Concerning granted PFMs, 24 high-voltage continuous mining machines are in mines having 20 to 500 employees and 2 high-voltage continuous mining machines are in 1 mine that has more than 500 employees. Furthermore, an annual net increase of 2 additional mine operators, having 20 to 500 employees, are estimated to choose to use 4 high-voltage continuous mining machines (2 machines per mine). Table VII-2 shows the rule's first three years of annual burden hours and costs related to testing ground-fault and ground-wire monitor circuits prior to tramming, for mine operators with 20 to 500 employees. Table VII-3 shows annual burden hours and costs related to testing

ground-fault and ground-wire monitor circuits prior to tramming for the 1 mine operator with more than 500 employees.

Table VII-2: Annual Burden Hours and Costs to Test Ground-Fault and Ground-Wire Monitor Circuits, Required by Section 75.829 (For Mine Operators With 20 to 500 Employees)

a	b	c	d	e	f	g	h	i
Years	No. of HVCM Machines [a]	Time for Tests [b]	No. of Times Tests & Record Done Annually	Annual Burden Hours (b x c x d)	Wage Rate (per hr.)	Annual Burden Costs (e x f)	Present Value Factor [c]	Present Value of Burden Costs [d] (g x h)
1	28	0.35	2	20	$29.73	$583	1	$583
2	32	0.35	2	22	$29.73	$666	0.934579	$622
3	36	0.35	2	25	$29.73	$749	0.873439	$654

[a] 28 HVCMs in first year = 24 HVCMs in 10 mines having 20 to 500 employees + 4 HVCMs in 2 mines having 20 to 500 employees. Every year thereafter 4 HVCMs in 2 mines having 20 to 500 employees are added. Thus, for example 32 HVCMs in year 2 = 24 existing HVCMs + 4 HVCMs from the first year + 4 HVCMs from the second year.

[b] 0.35 hours = 0.25 hrs. to conduct tests + 0.1 hrs. to make record.

[c] Present Value Factor beginning in year 2 = 1/(1.07)year -1.

[d] Present Value of Burden Costs = Annual Burden Costs x Present Value Factor.

Table VII-3:
Annual Burden Hours and Costs to Test Ground-Fault and Ground-Wire Monitor Circuits, Required by Section 75.829 (For Mine Operators With More Than 500 Employees)

No. of HVCM Machines	Time for Tests [a]	No. of Times Tests & Record Done Annually	Annual Burden Hours	Wage Rate (per hr.)	Annual Burden Costs
2	0.35	2	1	$29.73	$42

[a] 0.35 hours = 0.25 hrs. to conduct tests + 0.1 hrs. to make record.

Proposed §75.831 – Annual Burden Hours and Costs

Proposed §75.831 requires tagging: prior to working on high-voltage trailing cables or on a high-voltage continuous mining machine (under paragraph (a)); testing or troubleshooting cables (under paragraph (b)); troubleshooting or testing a low- or medium-voltage circuit contained in an enclosure with exposed high-voltage conductors or parts (under paragraph (d)); and working on power centers (under paragraph (e)). These tagging requirements were formulated based on granted PFMs.

On average, MSHA estimates that, for at least one of these requirements, tagging would occur once for each of the 240 workdays per year. On average tagging, by a mine electrician earning $29.73 per hour, is estimated to take 0.167 hours (1 minute). Concerning granted PFMs, 24 high-voltage continuous mining machines are in mines having 20 to 500 employees and 2 such machines in the 1 mine having more than 500 employees. Table VII-4 shows, by size category, the transfer burden hours and costs for tagging equipment.

TableVII-4: Annual Burden Hours and Costs
Related to Tagging Required by Section 75.831

Emp. Size Category	No. of Machines	Time to Tag per machine (in hrs.)	Times Tagging Occurs per Work Day	No. of Work Days (per yr.)	Annual Burden Hours	Mine Electrician Wage Rate (per hr.)	Annual Burden Costs
20 to 500	24	0.0167	1	240	96	$29.73	$2,854
>500	2	0.0167	1	240	8	$29.73	$238
Total	26				104		$3,092

In addition, MSHA anticipates that annually a net of 2 additional mine operators having 20 to 500 employees would choose to use high-voltage continuous mining machines and thus need to follow the tagging requirements noted above. Each of these mine operators is assumed to have 2 high-voltage continuous mining machines. Table VII-5 shows the rule's first three years of annual burden hours and costs for mine operators that would choose to use high-voltage continuous mining machines in the future.

TableVII-5: Annual Burden Hours and Costs
Related to Tagging Required by Section 75.831
(For Mine Operators With 20 to 500 Employees)

Year	No. of Machines [a]	Time to Tag per machine (in hrs.)	Times Tagging Occurs per Work Day	No. of Work Days (per yr.)	Annual Burden Hours	Mine Electrician Wage Rate (per hr.)	Annual Burden Costs
1	4	0.0167	1	240	16	$29.73	$476
2	8	0.0167	1	240	32	$29.73	$951
3	12	0.0167	1	240	48	$29.73	$1,427

[a] Each year 2 mine operators choose to use high-voltage continuous mining machines (2 machines per mine). In year 1 there are 4 machines. In year 2 there are 8 machines (4 machines from year 1 + 4 more machines in year 2).

Proposed §75.832 – Tests and Records

Paragraphs (a), (b), and (c) of proposed §75.832 requires that exams or tests be conducted at least once every seven days and paragraph (g) requires that a record be made of such exams or tests.

Paragraph (a) requires an exam of the high-voltage continuous mining machine. Paragraph (b) requires a test of the ground-fault test circuit. The exams of the high-voltage continuous mining machine required by paragraphs (a) and (b) are already being conducted as part of a larger weekly examination of electrical equipment that is required under existing §75.512 (electrical equipment; examination, testing and maintenance). Existing §75.512 also requires that a record be made of all such exams and tests. Thus, the burden associated with exams and records under proposed §75.832 (a) and (b) are already accounted for under existing §75.512, and are included in existing paperwork package 1219-0116. Therefore, such burden does not need to be included in the paperwork package accompanying this rulemaking.

Paragraph (c) requires a test of the ground-wire monitor circuit at least once every seven days. Currently, a monthly ground-wire monitor circuit test referred to in paragraph (c) is already required for high-voltage circuits under existing §75.800-3, and recordkeeping for such test is required by existing §75.800-4. The paperwork burden for the monthly test is accounted for in paperwork package 1219-0116 (formerly 1219-0067). Since the rule is proposing that the ground-wire monitor circuit test be conducted at least every seven days instead of once a month, the burden for the weekly test of the ground-wire monitor circuit will be developed in the paperwork package that accompanies the high-voltage continuous miner rulemaking; and the burden in paperwork package 1219-0116 will be reduced to eliminate the paperwork to operators that is associated with the monthly ground-wire monitor circuit test.

The ground-wire monitor test is conducted on the power station. The Agency assumes that there is one power station per high-voltage continuous mining machine. MSHA estimates that it takes 2 minutes to conduct the ground-wire monitor test and 1 minute to make the record. The test, performed at least once every seven days, is conducted by a mine electrician earning $29.73 per hour. Table VII-6 shows the annual burden hours and costs for operators with granted PFMs to conduct the test for 24 high-voltage continuous mining machines in mines having 20 to 500 employees and for 2 such machines in the 1 mine having more than 500 employees.

Table VII-6: Annual Burden Hours and Costs
Related to Ground-Wire Monitor Circuit Test Required by Section 75.832

Emp. Size Category	No. of Pieces of Equipment	Time to Conduct Test & Make Record (in hrs.) [a]	No. of Times Test Conducted Annually	Annual Burden Hours	Mine Electrician Wage Rate (per hr.)	Annual Burden Costs
20 to 500	24	0.05	52	62	$29.73	$1,855
>500	2	0.05	52	5	$29.73	$155
Total	26			68		$2,010

[a] 0.05 hrs. = 0.0333 hrs. (2 minutes) to conduct the test and 0.0166 hrs. (1 minute) to make the record.

In addition, MSHA anticipates that annually a net of 2 additional mine operators having 20 to 500 employees would choose to use high-voltage continuous mining machines and thus need to conduct the ground-wire monitor circuit test. Table VII-7 shows the rule's first three years of annual burden hours and costs for mine operators that choose to use high-voltage continuous mining machines in the future.

Table VII-7: Additional Annual Burden Hours and Costs
Related to Ground-Wire Monitor Circuit Test Required by Section 75.832
(For Mine Operators With 20 to 500 Employees)

Year	No. of Machines [a]	Time to Conduct Test and Make a Record (in hrs.)	No. of Times Test Conducted Annually	Annual Burden Hours	Mine Electrician Wage Rate (per hr.)	Annual Burden Costs
1	4	0.05	52	10	$29.73	$309
2	8	0.05	52	21	$29.73	$618
3	12	0.05	52	31	$29.73	$928

[a] Each year 2 mine operators choose to use high-voltage continuous mining machines (2 machines per mine). In year 1 there are 4 machines. In year 2 there are 8 machines (4 machines from year 1 + 4 more machines in year 2).

Since the burden on operators to conduct the ground-wire monitor circuit test is developed above, and would be accounted for in the paperwork package that accompanies the high-voltage continuous miner rulemaking when it becomes final, the annual burden for conducting the same test, noted in Table VII-8, would be eliminated from existing §75.800 in existing paperwork package 1219-0166 (formerly 1219-0067).

Table VII-8: Annual Burden Hours and Costs Reduction
in Paperwork Package 1219-0166 (fromally 1219-0067)
Related to Ground-Wire Monitor Circuit Test Required by Section 75.800

Emp. Size Category	No. of Pieces of Equipment	Time to Conduct Test & Make Record (in hrs.) [a]	No. of Times Test Conducted Annually	Annual Burden Hours	Mine Electrician Wage Rate (per hr.)	Annual Burden Costs
20 to 500	24	0.05	12	14	$ 29.73	$428
>500	2	0.05	12	1	$ 29.73	$36
Total	26			16		$464

[a] 0.05 hrs. = 0.0333 hrs. (2 minutes) to conduct the test and 0.0166 hrs. (1 minute) to make the record.

Proposed §75.825 – Caution Labels

Paragraph (i) of proposed §75.825 requires that all compartments providing access to energized high-voltage conductors and parts must display a caution label to warn miner against entering the compartment(s) before de-energizing incoming high-voltage circuits. This is a normal business practice of manufacturers that make such compartments. Manufacturers currently place warning labels on compartments they make.

Proposed §75.827 – Warning Signs

Paragraph (b) of §75.827 concerns the temporary lacing of cables into a sled or crosscut in certain specified areas of the mine. In such areas warning signs and barricade tape must be placed around the sled or at the entrances to the crosscut to restrict mobile equipment travel. Warning signs and barricade tape that may be purchased from any industrial supply vendor may be used to satisfy this requirement. The costs for such materials are included in the paperwork package that accompanies the proposed rulemaking.

Elimination of Annual Burden Hours From Paperwork Package 1219-0065

Due to this rulemaking, mine operators would no longer have to obtain PFMs of existing 30 CFR §75.1002 in order to use a high-voltage continuous mining machine. Existing OMB paperwork package 1219-0065 includes annual burden hours and costs related to the time it takes mine operators to prepare and file petitions with MSHA, including PFMs to use a high-voltage continuous mining machine. As a result of this rulemaking, the burden hours and costs in OMB paperwork package 1219-0065 that relate to the time it takes operators to prepare and file petitions would need to be reduced to reflect the fact that PFMs to use a high-voltage continuous mining machine would no longer be needed.

On average, 5 underground coal mines are estimated to file PFMs to use a high-voltage continuous mining machine annually. A mine supervisor, earning $58.96 per hour, is estimated to take 16.75 hours to prepare a petition. On average, a clerical worker, earning $20.39 per hour, is estimated to take 0.1 hours to copy and mail a petition. Table VII-9 shows, for mine operators with 20 to 500 employees, the annual burden hours and costs eliminated due to no longer needing to file a PFM to use a high-voltage continuous mining machine.

Table VII-9: Eliminated Annual Burden Hours
in Paperwork Package 1219-0065
Resulting From Mine Operators
No Longer Needing to File a Petition For Modification

Emp. Size Category	No. of Petitions Filed Annually	Hours to Prepare a Petition [a]	Annual Burden Hours	Mine Supervisor Hourly Wage Rate [b]	Annual Burden Savings
20 to 500	5	16.85	84.3	$58.73	$4,948

[a] 16.85 hours = 16.75 hours for mine supervisor + 0.1 hours for clerical worker.

[b] $58.73 =((16.75 hours/16.85 hours) x $59.96 mine supervisors hourly wage rate) + ((0.1 hours/16.85 hours) x $20.39 clerical workers hourly wage rate).

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2. U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002*, DOE/EIA-0584(2002).
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6. Western Mine Engineering Inc., *U.S. Coal Mine Salaries, Wages, & Benefits – 2002 Survey results.* 2002.