

Regulatory Economic Analysis
For
Part 6 Final Rule - Testing and Evaluation By Independent
Laboratories And Non-MSHA Product Safety Standards
For 30 CFR Parts 18, 19, 20, 22, 23, 27, 33, 35, 36,
and
Amending Part 7.2, and Adding Part 7.10

U.S. Department of Labor
Mine Safety and Health
Administration
Office of Standards,
Regulations, and Variances

June 2003

Table of Contents

I. EXECUTIVE SUMMARY	1
INTRODUCTION	1
RULEMAKING HISTORY	2
BACKGROUND	3
SCOPE.....	3
BENEFITS	3
COMPLIANCE COSTS	3
EXECUTIVE ORDER 12866 AND REGULATORY FLEXIBILITY ACT	4
II. INDUSTRY PROFILE	5
INTRODUCTION	5
ENTITIES AFFECTED BY THE RULEMAKING.....	6
THE MINING INDUSTRY.....	8
III. BENEFITS	9
INTRODUCTION	9
MINING PRODUCTS AFFECTED BY THIS RULEMAKING	9
SHORTEN THE APPROVAL PROCESS	13
APPLICANT COST SAVINGS	14
Testing and Evaluation by Independent Laboratories	15
Equivalent Non-MSHA Product Safety Standards	15
INCREASE NUMBER OF SAFETY-ENHANCING PRODUCTS IN MINES .	16
THE AGENCY COULD BENEFIT FROM REVISIONS TO NON-MSHA	
PRODUCT SAFETY STANDARDS THAT ADDRESS TECHNOLOGICAL	
ADVANCES IN SAFETY.....	17
INCREASE MSHA KNOWLEDGE OF MINING PRODUCTS	17
THE FINAL RULE WILL NOT REDUCE MINER SAFETY	17
IV. COMPLIANCE COSTS	19
INTRODUCTION	19
SUMMARY OF ESTIMATED COMPLIANCE COSTS	19
COST ANALYSIS.....	21
METHODOLOGY	21
PART 6 - COMPLIANCE COST SAVINGS FOR APPLICANTS	
REQUESTING AN MSHA APPROVAL BASED ON MSHA’S APPROVAL	
REQUIREMENTS	22
PART 6 - COMPLIANCE COST SAVINGS FOR APPLICANTS	
REQUESTING AN MSHA APPROVAL BASED ON <u>NON</u> -MSHA	
PRODUCT SAFETY STANDARDS	25
Part 18	26
Parts 19 and 27	30
Part 20	31
Part 22	31

Part 23	32
Part 35	33
PART 6 – COMPLIANCE COSTS	34
Section 6.10(a)(1) through (a)(3) Compliance Costs.....	34
Section 6.10(d) Compliance Costs.....	36
Section 6.10(a)(2) Compliance Costs Associated with §6.10(d).....	38
Section 6.10(e)	39
Section 6.10(f).....	40
PART 7 – COMPLIANCE COST SAVINGS FOR APPLICANTS	
REQUESTING AN MSHA APPROVAL BASED ON EQUIVALENT <u>NON-</u>	
MSHA PRODUCT SAFETY STANDARDS	41
FEASIBILITY	45
V. REGULATORY FLEXIBILITY CERTIFICATION.....	46
INTRODUCTION	46
DEFINITION OF A SMALL ENTITY	46
FACTUAL BASIS FOR CERTIFICATION.....	46
VI. OTHER REGULATORY CONSIDERATIONS	48
THE UNFUNDED MANDATES REFORM ACT	48
EXECUTIVE ORDER 12630: GOVERNMENT ACTIONS AND	
INTERFERENCE WITH CONSTITUTIONALLY PROTECTED	
PROPERTY RIGHTS	48
EXECUTIVE ORDER 12988: CIVIL JUSTICE REFORM	48
EXECUTIVE ORDER 13045: PROTECTION OF CHILDREN FROM	
ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS.....	48
EXECUTIVE ORDER 13132: FEDERALISM	48
EXECUTIVE ORDER 13175: CONSULTATION AND COORDINATION	
WITH INDIAN TRIBAL GOVERNMENTS.....	48
EXECUTIVE ORDER 13211: ENERGY	49
EXECUTIVE ORDER 13272: PROPER CONSIDERATION OF SMALL	
ENTITIES IN AGENCY RULEMAKING.....	49
VII. PAPERWORK REDUCTION ACT OF 1995	50
INTRODUCTION	50
PAPERWORK PROVISIONS	50
Section 6.10(a)(1) through (a)(3).....	50
Section 6.10(a)(2) Compliance Costs Associated with §6.10(d).....	52
Section 6.10(f).....	53
References.....	55

I. EXECUTIVE SUMMARY

INTRODUCTION

The Mine Safety and Health Administration (MSHA) is publishing a final rule that establishes alternate requirements for the Agency to accept applications from applicants requesting an MSHA product approval. Under the final rule, a new part 6 will be added to 30 CFR that affects parts 18, 19, 20, 22, 23, 27, 33, 35, and 36 of MSHA's regulations. The final rule also modifies part 7, in that it amends existing part 7.2 and adds a new part 7.10. There are three basic elements of the final rule.

First, under part 6 of the final rule, applicants seeking an MSHA product approval have the option of having certain testing and/or evaluation supporting their product conducted by an independent laboratory, rather than by MSHA. Currently, with the exception of part 7, MSHA must conduct all applicable tests and evaluations on products requiring an MSHA approval.¹

Second, also under part 6 of the final rule, applicants requesting an MSHA product approval may request that the approval be based on product safety standards other than MSHA's if the Agency has determined that they are equivalent. Non-MSHA product safety standards can be used if they provide at least the same degree of protection as MSHA's approval requirements, or can be modified to do so.² Currently, applicants must use MSHA's approval requirements to obtain an MSHA product approval.

Third, the final rule contains an "equivalency provision" to 30 CFR part 7, similar to the one noted in the second element above, by amending part 7.2 and adding part 7.10. Existing part 7 standards allow applicant or third party testing, but do not allow applicants to obtain an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

This Regulatory Economic Analysis (REA) addresses the benefits and compliance costs associated with the final rule. Section 508 of the Federal Mine Safety and Health Act of 1977 provides the authority for this rulemaking. Executive Order 12866 requires that regulatory agencies complete a REA for any rule having major economic consequences for the national economy, an individual industry, a geographic region, or a level of government. The Regulatory Flexibility Act (RFA) similarly requires regulatory agencies to consider a rule's economic impact on small entities.

¹ Under existing Part 7, testing is performed by the applicant or a third party. MSHA only evaluates Part 7 drawings and test results; however, MSHA still issues the final approvals.

² Under the final rule, MSHA will publish its intent to review a non-MSHA product safety standard for equivalency in the Federal Register to solicit public input. After MSHA completes its evaluation of such standard, which includes consideration of any public input received, and determines it to be equivalent, the Agency will publish a listing in this part 6. The listing will provide a summary of MSHA's review of the standard and will identify any required modifications to the original non-MSHA product safety standard. MSHA will provide equivalency determination reports to the public upon request to its Approval and Certification Center.

This REA has been prepared to fulfill the requirements of Executive Order 12866 and the RFA. MSHA certifies that this final rule will not impose a significant economic burden on a substantial number of small entities.

RULEMAKING HISTORY

On November 30, 1994, MSHA published its 1994 proposed rule (59 FR 61376) stating its intent to end involvement in conducting testing and evaluation related to the Agency's product approvals. The 1994 proposed rule stated that all testing and evaluation supporting an applicant's product approval application needed to be conducted by a Nationally Recognized Testing Laboratory (NRTL) recognized by the Occupational Safety and Health Administration (OSHA).³ Public hearings on the 1994 proposed rule were held on April 30, 1996, and the comment period closed on May 31, 1996. No final rule was published. On October 17, 2002, MSHA published revisions to its 1994 proposed rule. Public hearings on the October 2002 proposed rule were held on January 7 and 9 of 2003, and the comment period closed February 10, 2003.

The 2002 proposed rule differed from the 1994 proposed rule in that MSHA would retain its testing and evaluation capabilities and offer applicants a choice of having certain testing and evaluation related to product approvals conducted by either MSHA or an independent laboratory.⁴ There is almost no difference in concept between the 1994 proposed rule and the 2002 proposed rule concerning the issue of an applicant's ability to use equivalent non-MSHA product safety standards that are different from MSHA's in order to obtain a product approval. The main difference is that MSHA would be providing, in the 2002 proposed rule, an opportunity for interested parties to have input into equivalency decisions.

Under the 1994 proposed rule, part 6 applied to 30 CFR parts 18, 19, 20, 22, 23, 26, 27, 29, 33, and 35. The 1994 proposed rule did not propose to amend part 7. Since the 1994 proposed rule was published, parts 26 and 29 have been eliminated from 30 CFR (64 FR 43280). With the exception of parts 26 and 29, part 6 under the 2002 proposed rule, applies to all parts included in the 1994 proposed rule, and adds part 36. Further, the 2002 proposed rule now amends part 7 to allow for equivalent non-MSHA product safety standards.

³ Under the November 30, 1994 proposed rule, a Nationally Recognized Testing Laboratory was defined as an independent laboratory that is recognized by the U.S. Department of Labor, Occupational Safety and Health Administration, to perform testing in accordance with 29 CFR 1910.7.

⁴ An independent laboratory is one that has been recognized by a laboratory accrediting organization, and is free from any commercial, financial, and other pressures that may influence the results of the testing and evaluation process. Examples of such organizations are: U.S. Department of Labor/Occupational Safety and Health Administration's National Recognized Testing Laboratory Program; American Association for Laboratory Accreditation (A2LA); and International Electrotechnical Commission (IEC).

BACKGROUND

Under the Federal Mine Safety and Health Act of 1977 (Mine Act), MSHA is responsible for approving certain products used in underground gassy U.S. mines.⁵ MSHA approval regulations govern the process through which applicants obtain MSHA approval of their products. Currently, with the exception of part 7, MSHA's Approval and Certification Center (A&CC) conducts most product testing and evaluation needed to obtain an MSHA approval.⁶ The Agency charges the applicant a fee for providing the MSHA approval. Following MSHA approval, the applicant must ensure that the product continues to be produced according to the design and specifications approved by MSHA, and contains an MSHA approval marking.

SCOPE

Companies requesting an MSHA approval for their products under parts 7, 18, 19, 20, 22, 23, 27, 33, 35, and 36 are covered by this rulemaking. These companies can be very large. For example, one such company employs about 4,500 persons worldwide. MSHA has been able to obtain sales revenue data for some potential applicants that MSHA believes could be affected by this rule. The data show that sales revenue for companies employing 500 or fewer workers can range from \$1 million to \$25 million annually. For applicants employing more than 500 workers, annual sales revenues are typically in the hundred million dollar range. One company's controlling partner has annual sales revenues approaching \$2 billion.

BENEFITS

The final rule improves miner safety by encouraging applicants with safety-enhancing products that could be applicable to mining to apply for MSHA approvals and by shortening the approval process to allow for quicker entrance of technologically-advanced products into the mine. In addition, the rule reduces applicants' costs by eliminating repeat testing and evaluation, and the need for multiple product lines. Finally, the final rule provides MSHA with more effective methods of keeping up with mining product improvements that affect miner safety.

COMPLIANCE COSTS

As shown in Table IV-1, the final rule will result in an annual net cost savings of about \$1.5 million. Applicants employing 500 or fewer workers will realize net cost savings of \$0.66 million. Applicants employing more than 500 workers will realize net cost savings of \$0.86 million.

⁵ All underground coal mines are considered to be gassy mines. However, not all of the underground metal and non-metal mines are considered to be gassy mines.

⁶ Under part 15 (requirements for approval of explosives and sheathed explosive units) and part 28 (fuses for use with direct current in providing short circuit protection for trailing cables in coal mines), testing is conducted at non-MSHA laboratories that have the special facilities which MSHA lacks.

The net cost savings of \$0.66 million, for applicants employing 500 or fewer workers, consists of cost savings of \$0.68 million and compliance costs of \$0.02 million. The net cost savings of \$0.86 million, for applicants employing more than 500 workers, consist of cost savings of \$0.88 million and compliance costs of \$0.02 million.

EXECUTIVE ORDER 12866 AND REGULATORY FLEXIBILITY ACT

Executive Order 12866 requires that regulatory agencies assess both the costs and the benefits of intended regulations. MSHA has fulfilled this requirement for the final rule and determined that this rulemaking will not be economically significant under § 3(f)(1) of Executive Order (E.O.) 12866. However, we have determined that this final rule is significant under § 3(f)(4) of E.O. 12866, which defines a significant regulatory action as one that may "... raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order."

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 entity and publishes that definition in the Federal Register for notice and comment. For the mining industry, SBA defines "small" as a mine with 500 or fewer workers. In addition, most applicants (manufacturers) that file for an MSHA approval for their products operate in industries such as mining, measurement, analysis, controlling instruments, photographic instruments, commercial and industrial lighting fixtures, and conveyors. SBA considers the small business size standard for such industries to be 500 or fewer employees. To ensure that the final rule conforms to the RFA, MSHA has analyzed the economic impact of the final rule on small entities that are defined as those employing 500 or fewer workers.

Based on its analysis, MSHA has determined that the final rule will not have a significant economic impact on a substantial number of small entities. MSHA has so certified this finding to the SBA. The factual basis for this certification is discussed in Chapter V of this REA.

II. INDUSTRY PROFILE

INTRODUCTION

The hazardous nature of mining necessitates the use of safety-enhancing products in mines. A variety of products used in underground gassy U.S. mines are approved by MSHA under requirements contained in Title 30 of the Code of Federal Regulations (30 CFR). The purpose of MSHA's Approval and Certification Center (A&CC) is to test and evaluate products used in these mines to ensure compliance with the Agency's requirements. The A&CC is the only facility in the country responsible for ensuring that products are safe before they enter a U.S. mine. MSHA approves products for entry into mines under the following parts of 30 CFR:

Part 7: Testing by applicant or third party;

Part 15: Requirements for approval of explosives and sheathed explosive units;

Part 18: Electric motor-driven mine equipment and accessories;

Part 19: Electric cap lamps;

Part 20: Electric mine lamps other than standard cap lamps;

Part 22: Portable methane detectors;

Part 23: Telephones and signaling devices;

Part 27: Methane-monitoring systems;

Part 28: Fuses for use with direct current in providing short-circuit protection for trailing cables in coal mines;

Part 33: Dust collectors for use in connection with rock drilling in coal mines;

Part 35: Fire-resistant hydraulic fluids; and

Part 36: Approval requirements for permissible mobile diesel-powered transportation equipment.

All parts of 30 CFR noted above, except for part 15 and part 28, are included in this final rulemaking. Part 15 is not included in this rulemaking because explosive testing is unique to MSHA. MSHA uses the National Institute for Occupational Safety and Health (NIOSH) explosive testing facility. It is the only test facility in the U.S. capable of performing the required explosive testing. Part 28 is not included because independent laboratory testing and evaluation is inherent to that regulation. In addition, MSHA's existing part 28 requirements are based on industry-standard fuse requirements, and as such, no equivalent requirements will need to be considered.

The approval process begins when an applicant files an application to obtain MSHA approval for its products. The approval application consists of a request letter and all necessary drawings and/or specifications to describe sufficiently the critical features of the product. Depending on the product line, there may be additional materials required for submission (e.g., checklists, drawing lists, or test samples).

After the A&CC determines that the application meets MSHA's application requirements (as stated in 30 CFR), the Center performs a preliminary review of the application and develops and presents a fee estimate to the applicant. Once the applicant accepts the fee estimate, then A&CC personnel compare the submitted documentation with MSHA's requirements, existing policies and procedures, and performs any necessary testing and evaluation on the submitted product. After all testing and evaluation have been completed and discrepancies resolved MSHA either approves or denies approval of the product. The applicant receives an invoice for the cost of the investigation after completion.

Product samples are usually submitted to the A&CC for inspection prior to approval. However, in some cases, A&CC personnel perform field or factory inspections of products. In the case of machines, the A&CC investigator normally visits the factory to inspect the prototype to ensure that it is built according to submitted drawings. In other cases (e.g., longwall mining systems), the A&CC inspection of the assembled system occurs at the mine site.

A&CC work encompasses more than just processing initial approval applications for products used in mines. The A&CC also processes other types of applications (e.g., approval extensions, certifications, field modifications to existing approvals, experimental permits, and intrinsic safety evaluations). In addition, A&CC personnel conduct post approval product audits, investigate field complaints, assist in accident investigations and in writing accident investigation reports, and provide technical assistance to the mining community.

During the period October 1, 2000 through September 29, 2001, the A&CC processed 796 approvals. In addition to the 796 applications, there were 937 quality assurance actions completed by the A&CC. A quality assurance action is typically an audit of an approved piece of equipment, but it also could be an investigation of a field complaint.

ENTITIES AFFECTED BY THE RULEMAKING

Companies requesting an MSHA approval for their products will be affected by this rulemaking. These companies can be very large. For example, one company possibly affected by the rule employs about 4,500 persons worldwide. MSHA has been able to obtain sales revenue data for some potential applicants that the Agency believes could be affected by this rule. The data show that sales revenue for companies employing 500 or fewer workers can range from \$1 million to \$25 million annually. For applicants employing more than 500 workers, annual sales revenues are typically in the hundred million dollar range. One company's controlling partner has annual sales revenues approaching \$2 billion.

Products approved by MSHA encompass a variety of areas, such as gas detection, mining machinery, communications, electronic breathing apparatus, industrial lighting, industrial fluids, seismic services, air sampling, air purification, flame detection, ground penetrating radar systems, and an assortment of safety equipment for workers in all types of working environments. MSHA often approves products for use in mines that are already approved for use in non-mining environments. Applicants that apply for an

MSHA product approval tend to specialize in the design, manufacture, and marketing of select products in order to optimize resources and be more economically efficient. Such companies can increase sales revenue by selling their products in multiple markets. Thus, some MSHA applicants also distribute their products in medical, communications, law enforcement, military and commercial aircraft, earth sciences, automotive, tunneling, and construction markets.

With the exception of part 7, MSHA's current regulations require the Agency to perform all testing and evaluation before a product approval is issued. For companies already selling products in non-mining markets, certain testing and evaluation that MSHA would perform to issue a product approval have already been conducted by an independent laboratory and paid for by the company. In this situation, MSHA may recognize that certain testing and evaluation required by MSHA has already been performed correctly but MSHA is currently required to repeat them in order to issue an approval. This creates an unnecessary cost barrier for the company to enter the mining market. This cost barrier to entry is likely to be particularly important in the mining market, where expected revenues are limited.

Companies must make a decision whether or not to market their product to the mining community. Generally, that decision is based on the expectation of a profitable opportunity: that (net) revenues realized in the mining market outweigh the cost of obtaining an MSHA approval. This final rule will increase profitable opportunities to enter the mining market by removing unnecessary cost barriers. Consequently, more safety-enhancing and technologically-advanced products will be introduced and used in the mining environment, and miner safety could be improved.

Companies may also increase sales revenue by selling their products to mining markets outside the United States. When this occurs, the company usually is required to get a product approval from a foreign approval body based on non-MSHA product safety standards. Currently, if a company has a non-MSHA approval, is marketing its product in a mining market outside the United States, and wants to market the product in the United States mining market, the company must again go through the entire approval process to ensure compliance with MSHA's approval requirements. This is true even if the non-MSHA product safety standards are equivalent to MSHA's approval requirements. In this situation, since MSHA's approval requirements have to be followed, the company may need to develop two different product lines for the same mining product: one product based on the non-MSHA product safety standards and a second product based on MSHA's approval requirements. This is unnecessary when the non-MSHA approval requirements and MSHA's approval requirements, although not exactly the same, are considered equivalent. Development of two different product lines for the same product imposes additional time and expense on the company, and is an indirect cost barrier that could discourage a company from seeking an MSHA product approval. Under the equivalency portion of the final rule, MSHA will be able to issue approvals based on non-MSHA product safety standards as long as such requirements provide at least the same degree of protection as the MSHA requirements. Therefore, both domestic and foreign companies will have more of an incentive to market their products to U.S. mines.

THE MINING INDUSTRY

Products are approved by MSHA for use in any underground gassy U.S. mine. Table II-1 shows the number of underground gassy coal and metal/non-metal (M/NM) mines along with employment in those mines (excluding office workers).

Table II-1: Underground and Surface Coal and M/NM Mines in 2001*

Gassy Underground Coal Mines ^a		Gassy Underground M/NM Mines ^b	
Mines	Miners	Mines	Miners
664	37,179	23	1,834

* Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2001 data.

^a All underground coal mines are considered to be gassy mines.

^b Not all of the underground M/NM mines are considered to be gassy mines.

III. BENEFITS

INTRODUCTION

The final rule will make it easier and less costly for applicants to introduce products into the mine. As a result, applicants will introduce more safety-enhancing products into the mining environment more quickly, leading to improved miner safety.

In this chapter, we provide a qualitative discussion of the elements of the final rule that will increase miner safety. We begin by reviewing the types of mining products affected by this rulemaking. Next, we describe how the final rule could shorten MSHA's approval process and reduce applicant costs of having their technologically advanced products approved by the Agency. Two other secondary effects of the final rule are then discussed: a reduction in the need for rulemaking to address technological advances in safety and an increase in MSHA's knowledge of mining products. The net effect of all these factors is to increase and accelerate the number of safety-enhanced products introduced into the mining environment. Finally, we explain why the changes in the approval process brought about by the final rule will not decrease the safety of products that enter U.S. mines.

MINING PRODUCTS AFFECTED BY THIS RULEMAKING

Products affected by this rulemaking are noted under the following regulations found in Title 30 CFR:

- Part 7: Testing by applicant or third party;
- Part 18: Electric motor-driven mine equipment and accessories;
- Part 19: Electric cap lamps;
- Part 20: Electric mine lamps other than standard cap lamps;
- Part 22: Portable methane detectors;
- Part 23: Telephones and signaling devices;
- Part 27: Methane-monitoring devices;
- Part 33: Dust collectors for use in connection with rock drilling in coal mines;
- Part 35: Fire-resistant hydraulic fluids; and
- Part 36: Approval requirements for permissible mobile diesel-powered transportation equipment.

Products are approved by MSHA with the intent of avoiding explosions, fires, and other safety hazards related to use of the product (mainly explosions, but also fires and releases of toxic gases). Today, most mine explosions are caused by methane gas being ignited. Methane is the most common flammable gas found in coal and in some other minerals. Methane is colorless, odorless, tasteless, and tends to rise to the mine roof because it is lighter than air. Although it is nontoxic, methane reduces the oxygen concentration by dilution when mixed with air, and thus acts as an asphyxiant.

Over 10,000 deaths have been attributed to the presence of methane gas in the nation's coal mines.⁷ These were due primarily to the fact that, when in the range of 5 to 15 percent volume in the air, methane forms flammable and explosive mixtures. Mixtures in this composition range are easily ignited and propagate flames away from the ignition source (e.g., an electric arc or an open flame). Such flames produce toxic products (including carbon monoxide) and oxygen-deficient atmospheres, and in many cases ignite flammable dust, timbers, coal, and other combustibles found in mines. For this reason, MSHA standards require that methane not be allowed to accumulate in mines (under 30 CFR 75.321 in coal mines, and under 30 CFR 57.22231 through 57.22240 in M/NM mines). Parts 7, 18, 19, 20, 22, 23, 27, 33, 35, and 36 are concerned with approving products that eliminate ignition sources.

Part 7 sets forth requirements for MSHA approval of certain products used in underground mines whose testing and evaluation is conducted by the applicant or a third party and does not involve subjective analysis. Part 7 provides the mining community with an assurance that such products (especially those that could propagate fire or be ignition sources for explosions) can be safely used in gassy underground mine atmospheres. Part 7 was originally promulgated in 1988 to cover brattice cloth, ventilation tubing, and battery assemblies used in mines. Since 1988 other products used in mines have been added to part 7.⁸

Electric-powered machines used in mines have parts that can act as potential ignition sources or propagate flame. Part 18 addresses the elimination of ignition sources and the propagation of flame from electric-powered equipment by making electrical equipment either intrinsically safe or explosion-proof. Explosion-proof enclosures are designed to withstand internal explosions of methane-air mixtures: (1) without damage to the wall or cover, (2) without igniting surrounding methane-air mixtures, and (3) without discharging flame from inside to outside the enclosure. The other means of eliminating ignition sources or the propagation of flame on electric-powered equipment is through the use of intrinsically safe circuits. Intrinsically safe circuits are those electric circuits that are incapable of releasing enough electrical or thermal energy under normal or abnormal conditions to cause ignition of a methane-air mixture. In addition to certain intrinsically safe circuits included on electric-powered equipment, part 18 also covers intrinsically safe instruments such as toxic gas detectors and dust pumps to be used in explosive gas atmospheres.

Diesel-powered machinery used in mines also have parts that can act as potential ignition sources. The use of diesel-powered machines in underground mines introduces an internal combustion engine into an environment where explosive levels of methane can be present. In addition, diesel engines have high temperature exhaust components

⁷ U.S. Department of Labor, Mine Safety and Health Administration, National Mine Health and Safety Academy, Safety Manual No. 2 Mine Gases. 1986. P 13.

⁸ The following products are covered under existing Part 7: brattice cloth and ventilation tubing under Subpart-B; battery assemblies under Subpart-C; multiple shot blasting units under Subpart-D; diesel engines intended for use in underground coal mines under Subpart-E; diesel power packages intended for use in underground coal mines where permissible electrical equipment is used under Subpart-F; electric motor assemblies under Subpart-J; and electric cables, signaling cables, and cable splice kits under Subpart-K.

that, in the presence of coal and other combustibles in the underground mine environment, present a fire or explosion hazard. Part 36 sets forth construction, design, and test requirements that address the hazards of using diesel-powered machinery in underground mines.

Many mining machines use hydraulic systems to operate brakes and/or steering mechanisms. Hydraulic fluid is another potential ignition source. As a result of a broken hose, hydraulic fluid can come into contact with hot machine surfaces and cause an ignition. Under part 35 requirements, the Agency tests the non-flammability or fire-resistance of hydraulic fluid at certain temperatures in order to prevent the fluid from coming into contact with an ignition source in many mining circumstances.

A dust collector is an apparatus on a machine that collects dust when drilling into rock in mines.⁹ Under part 33, dust collectors are approved with the intention of preventing dissemination of airborne dust generated by drilling into coal mine rock strata. In a mine, limiting dust levels in the air: (1) reduces the magnitude of a disaster if a methane explosion occurs, and (2) limits a miner's dust exposure.

Cap lamps approved under part 19 and mine lamps (including flashlights) approved under part 20 are approved with the intention of eliminating an ignition source that could cause an explosion. In mines, the breakage of a lamp bulb and exposure of the filament can result in the ignition of explosive mixtures of methane and air.

Part 23 is concerned with approving communication devices (i.e., telephones and signaling devices), while parts 22 and 27 are concerned with approving methane detectors.¹⁰ These products are important devices that can reduce miner confusion and relay correct information to miners, while they are working or in the event of a disaster (e.g., a methane explosion). Communicating in or around a mine is a difficult task. Often, there are various communication problems in mines not encountered in most other work places. It is not uncommon for underground mines to have several activities, located miles apart, taking place simultaneously. Working crews have to communicate with each other underground, and with managers on the surface, and must do so in a safe manner. These devices, in order to be used safely in gassy or dust laden atmospheres must be designed so as not to cause a fire or ignition. Added to this is the fact that after a mine explosion occurs survival for an underground miner can often be measured in terms of minutes. Technological advances in communication and warning devices are progressing rapidly. For example, in November 1998, methane ignited at the Cyprus Plateau Mining Corporation's Willow Creek mine; 46 people underground escaped without injury, in part because a new type of page system quickly informed them of

⁹ A dust collector is generally used on drilling machines to gather dust that is produced in percussion rock drilling. The dust collector has an exhauster operated with compressed air from an available air system. The air laden with dust that is generated when drilling through rock is drawn from the boreholes of the rock through the drill and into a filter. The filtered air is exhausted with the spent compressed air through an exhaust port, and dust and cuttings settle in a removable storage tank.

¹⁰ Specifically, Part 22 concerns the approval of portable methane detectors, while Part 27 concerns approval of methane monitoring systems or components thereof for permissible equipment used in gassy mines, tunnels, or other underground workings.

impending danger.¹¹ It is imperative that the most up-to-date communication and warning devices be made available, as soon as possible, in the mining environment.

Table III-1 shows the number of accidents caused by ignitions and/or explosions from January 1996 through 2001. Overall, there were 582 accidents involving ignition or explosion during the period. Of the 582 accidents, 100 accidents (or about 17 percent) involved a fatality and/or an injury. There were 21 fatalities and 138 non-fatal injuries associated with the 100 accidents. Thirteen of the 21 fatalities resulted from two methane explosions that occurred on September 23, 2001 at Blue Creek No. 5 coal mine in Tuscaloosa County, Alabama.¹² Of the 138 injuries, 101 injuries (the addition of columns (f), (g), and (h)) or about 73 percent, involved days away from work for the miner.

Table III-1: Accidents from Ignitions and/or Explosions in Coal and M/NM Mines From 1996 through 2001 *

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Year	Total No. of Accidents	Total No. of Accidents With Injuries	No. of Fatalities And/or Injuries ^a	No. of Fatalities	No. of Injuries With Permanent Or Partial Disabilities	No. of Injuries With Days Away From Work	No. of Injuries With Days Away From Work & Restricted Activity	No. of Injuries With Only Days Restricted Activity	No. of Injuries Not Fatal & No Days Away From Work
1996	109	20	23	1	0	12	2	1	7
1997	113	22	25	0	0	17	3	2	3
1998	100	23	28	1	0	14	2	2	9
1999	110	14	32	2	1	17	2	4	6
2000	72	9	19	3	0	14	0	2	0
2001	78	12	32	14	0	16	1	1	0
Total	582	100	159	21	1	90	10	12	25

* U.S. Department of Labor, Mine Safety and Health Administration, data run generated for Office of Standards, Regulation, and Variances by Office of Program Evaluation and Information Resources. Accidents selected if the summary abstract describing the accident contained the words “ignition” or “explosion”.

^a Col. (d) = Col. (e) + Col. (f) + Col. (g) + Col. (h) + Col. (i) + Col. (j).

MSHA is not claiming that all or a specific number of accidents in Table III-1 will be eliminated as a result of the final rule. However, the data show the need to make the safest products available to the mining industry, and in the quickest manner possible

¹¹ Coal Age. News. January 1, 1999.

¹² The Birmingham News. “Mine Rescue Try Fails; 13 Dead.” September 25, 2001 edition.

that does not compromise the safety of the product. MSHA believes that the final rule achieves these objectives and will lead to a reduction in the number of mining accidents.

SHORTEN THE APPROVAL PROCESS

One commenter at the April 30, 1996 hearing concerning the 1994 proposed rule stated: “Since the success of a new product or even an entire product line is dependent upon timely introduction to the industry, the time required for the approval process or program becomes extremely critical.” At that same hearing another commenter stated: “We always struggle to minimize the time required to obtain approvals.”

Under the final rule, MSHA will accept testing and evaluation performed by an independent laboratory. This will reduce the time spent by a company to obtain an MSHA approval. Currently, MSHA must conduct all testing and evaluation for product approvals even if an independent laboratory has already performed the same test and evaluations. This extends the time of the approval process because certain testing and evaluation must be repeated by MSHA.

Companies commenting on the 1994 proposed rule voiced concern over the time to acquire an MSHA product approval. One commenter evaluated the 1994 proposed rule from the perspective of manufacturers that have long experience with MSHA and its approval process. Concerning this evaluation, the commenter noted that “A majority of those manufacturers evaluated MSHA’s charges as acceptable, and rated the technical expertise of MSHA examiners as fair to excellent. The respondents less favorably evaluated the speed of the MSHA approval process. The majority found that the MSHA system resulted in delays or was less responsive than the private sector.” Still, another commenter stated that they “applaud the initiative which ... release(s) the current bottlenecks in the MSHA certification program.”¹³

Under the final rule, MSHA will determine whether tests and evaluations already performed by an independent laboratory need to be repeated. MSHA will only repeat tests and evaluations already performed by an independent laboratory if the Agency has questions regarding the testing performed and the results. Since the final rule requires that independent laboratories be recognized by a laboratory accrediting organization, MSHA expects that most tests and evaluations performed by independent laboratories will be done correctly. Therefore, in most cases, repeat testing and evaluation will not be needed, and the approval process for those products already tested and evaluated by an independent laboratory will be shortened. The approved products could enter the mine more quickly, allowing the miner to enjoy the benefits of an improved product sooner.

MSHA reviewed a sampling of product approvals to see if the approval process for any of them would have been shortened if the final rule were in effect. The Agency

¹³ The commenters’ general opinion is that the time to process an approval could be reduced. However, concerning Part 18 approvals, one commenter stated that approval processing time has been improved upon and is no longer a major problem. This commenter stated “Over a decade ago, along with other manufacturers, we were very concerned by the extended time required to obtain MSHA certification under 30 CFR 18. This was due to the number and type of applications being received by MSHA at that time. Since then the workload is much reduced and the time taken to obtain certification is reduced to the extent that it is no longer a major problem.”

has determined that the time to acquire an MSHA product approval could have been shortened for the MSHA-approved products listed in Table III-2. Table III-2 lists the 30 CFR part the product applies to, the MSHA approval number, and the type of product, along with a description of its use. The approval process time could have been shortened for these products because applicants had already had some testing and/or evaluation performed on their product by a recognized independent laboratory before they applied for an MSHA product approval. MSHA has determined that, for the products listed in Table III-2, the Agency could have accepted some of the test and evaluation results performed outside the Agency, because most are the same as those performed by MSHA and they were done correctly.

Table III-2: MSHA Approved Products Possibly Affected by the Rule

30 CFR	Approval Number	Product – Intended Use
Part 23	9B-212-0 and 9B-213-0	Motorola Inc., Hand-held Radio (Model MT2000) – only portable hand-held radio available for use for underground communications
Part 22	8C-60-0	Mine Safety Appliances Company (MSA), Microgard Portable Alarm – provides audible and visual warning signal of low oxygen and high methane
Part 18	2G-3924-1	MSA, Escort Elf Portable Pump – allows sampling of mine atmosphere for dust
Part 22	8C-64-0	MSA, Passport Personal Alarm - gives audible and visual alarm signal for high levels of toxic and combustible gases
Part 18	2G-4002-0	MSA, Mini Series Personal Alarm – gives audible and visual alarm signal for high levels of toxic and combustible gases
Part 18	2G-3896-1	Industrial Scientific Corporation (ISC), Sampling Pump (Model SP402) – allows for remote monitoring of low oxygen and of toxic and combustible gases
Part 22	8C-61-0	ISC, Four-Gas Monitor (Model TMX410) – gives audible and visual warning and has a meter for detection of low oxygen and toxic and combustible gases

APPLICANT COST SAVINGS¹⁴

The applicants’ cost savings resulting from the final rule could indirectly increase miner safety. Reducing applicant costs will encourage current non-mining manufacturers to market their products in the mining industry, especially in cases where products that could be beneficial to mining have already been approved and are being marketed outside

¹⁴ Estimates of the magnitude of these cost savings are provided in Chapter IV of this REA.

the U.S. or in non-mining sectors. These cost savings provide an economic incentive that could help get safer products into mines sooner.

Testing and Evaluation by Independent Laboratories

As noted, many applicants have independent laboratories test and evaluate their products for other non-mining markets before acquiring MSHA product approval. The tests and evaluations conducted by independent laboratories are frequently the same ones that MSHA would perform if it were reviewing the applicant's product for use in mines. Since MSHA's existing product approval regulations require the Agency to conduct all tests and evaluations, even those already performed by an independent laboratory for another listing (approval), some duplication of applicant costs can occur. The applicant has already paid an independent laboratory for conducting the tests and evaluations. Now the applicant must pay MSHA for performing some of the same tests and evaluations.

The final rule permits MSHA to accept test and evaluation results that the Agency determines are in compliance with MSHA regulations and were performed correctly by an independent laboratory. Therefore, applicants will not have to pay MSHA to repeat such tests and evaluations. This gives the applicant a stronger incentive to apply for an MSHA approval.

Equivalent Non-MSHA Product Safety Standards

Currently MSHA only approves products based on its own approval requirements. If an applicant already has a mining product with a non-MSHA approval and wants an MSHA product approval, the applicant must have the product tested and evaluated according to MSHA's approval requirements. If the approval requirements for a mining product being marketed outside the United States are not exactly the same as MSHA's, the applicant might be required to develop two different product lines for two markets that are similar. This will include one product to market inside the United States and another to market outside the United States. The development of two different product lines for the same product causes additional time and expense for the manufacturer and, in some cases, may induce the manufacturer not to enter a second market.

A commenter to the 1994 proposed rule noted that "acceptance of international standards will allow manufacturers access to broader markets at lower initial penetration costs. Provided that at least the same degree of protection is maintained, there is no rational advantage to requiring manufacturers to produce different products for domestic and foreign markets."

MSHA does have some approval requirements that are the same or similar to other non-MSHA product safety standards.¹⁵ However, the final rule also addresses situations in which MSHA approval requirements and other industry standards differ. Under the final rule, the Agency could approve a product upon an applicant's request, based on non-MSHA product safety standards, as long as those standards are equivalent.

¹⁵ Underwriters Laboratories (UL) standard for intrinsic safety, "ANSI/UL-913, Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, and III Division 1 and 2, Hazardous Locations" is very similar to current MSHA intrinsic safety requirements.

For the purpose of this regulation, “equivalent” means that the non-MSHA product safety standards provide (or can be modified to provide) at least the same degree of protection as MSHA’s approval requirements.

The equivalency aspect of the final rule will permit manufacturers who currently have multiple product lines to develop a single product line. Developing a single product line reduces manufacturer costs to develop a product for two similar markets (e.g., markets outside the U. S. and markets in the U.S.). These reduced manufacturer costs include design costs, engineering costs, floor assembly costs, and costs related to warehousing of parts.

INCREASE NUMBER OF SAFETY-ENHANCING PRODUCTS IN MINES

All of the aforementioned effects of the final rule could help get more innovative products into the mining environment from applicants that, for market size or market entry cost reasons, have not previously sold their product to the mining industry. For example, there are manufacturers who already have products listed (that is, tested and evaluated) by an independent laboratory, and are currently selling them in non-mining markets. Some of these products, although not specifically developed for mining purposes, could be beneficial in mining. However, many of these manufacturers are not willing to obtain an MSHA approval because of the additional time and cost burdens associated with acquiring the MSHA approval. These manufacturers may believe the benefits gained from selling the product in the limited mining market do not outweigh the additional burdens associated with acquiring the MSHA approval.

For example, in the mid-1990s, mine operators did not have a portable communication device (i.e., walkie-talkie) that could be used in areas of underground mines requiring the use of permissible equipment. However, one manufacturer sold such a device in a non-mining market, and that device would have been beneficial for use in the mining market as well. The manufacturer already had an independent laboratory listing for the device. Mine operators wanted to use the device but could not because it lacked an MSHA approval. With encouragement from MSHA, the manufacturer applied for and obtained an MSHA approval for the portable device in 1996. The process of getting the device into mines was slow because there was not a strong incentive for the manufacturer to obtain an MSHA approval.¹⁶

Manufacturers often obtain other independent laboratory approval listings (e.g., Underwriters Laboratories Incorporated or Factory Mutual Research Corporation) for other markets prior to obtaining MSHA approval for their products. Review of the A&CC records shows that such listings for many devices currently used in mines precede

¹⁶ Examples of other instruments currently tested and evaluated by independent laboratories for use in hazardous gas and dust atmospheres that are suitable for use in the mine environment include the following: portable methane detectors; air sampling pumps; oxygen deficiency meters; air velocity meters; carbon monoxide detectors; hydrogen sulfide detectors; powered respirators and accessories; toxic gas detectors; laser surveying instruments; mine rescue communications systems; photometers; temperature sensing devices; personal audible and visual alarms; heat detection systems; voice amplifiers; position sensing devices; tape recorders; pressure sensing devices; data recording instruments; electrical diagnostic test instruments; sound level meters; sound level calibrators; audio dosimeters; and cable fault detectors.

the MSHA approval by up to 4 years.¹⁷ The final rule provides an incentive for manufacturers to obtain MSHA approval because they will not have to pay for repeat tests and evaluations. Therefore, a wider variety of products could be introduced into the mining environment that will improve the safety of the miner.

THE AGENCY COULD BENEFIT FROM REVISIONS TO NON-MSHA PRODUCT SAFETY STANDARDS THAT ADDRESS TECHNOLOGICAL ADVANCES IN SAFETY

Under the equivalency aspects of the final rule, which allows for approval based on non-MSHA product safety standards, the Agency could take advantage of revisions to other foreign and domestic standards to address technological advances or improvements for products used in U.S. mines. The equivalency portion of the final rule will permit the introduction of a wider variety of improved products into U.S. mines more quickly.

INCREASE MSHA KNOWLEDGE OF MINING PRODUCTS

This final rule will give MSHA personnel greater exposure to organizations that develop product safety standards. These organizations have personnel with valuable experience in testing and evaluating products for use in hazardous (explosive) atmospheres such as mining. As a result of MSHA's approving products to standards other than its own, Agency personnel will gain knowledge through discussions with their peers in other regulatory bodies. Interaction among these various organizations (including MSHA) can help them better understand each other's needs and provide a means to develop clearer and more flexible standards for products used in mines.

THE FINAL RULE WILL NOT REDUCE MINER SAFETY

Even though MSHA could base its approvals on equivalent non-MSHA product safety standards, the promulgation of the final rule will not decrease the safety of products that enter U.S. mines.

For example, if an applicant's target markets include the U.S. and a foreign market that has more stringent approval requirements for a specific product, MSHA will have the authority to issue an approval based on the more stringent requirements. The approval documentation will state that the product fulfilled the more stringent requirements in addition to those of MSHA. In this case, the approved product sold in the U.S. will have a higher degree of safety than required under existing MSHA regulations.

The targeted foreign market may also have product safety standards less stringent than MSHA's. In that case, the applicant will be required to fulfill the non-MSHA product safety standards, plus any modifications necessary to ensure that the product

¹⁷ Examples of instruments which were already approved by an independent laboratory at the time of application for MSHA approval include the following: Motorola MT2000 and HT1000 Hand-held Radios; MSA Microgard Portable Alarms; MSA Escort Elf Portable Pumps; MSA Passport and Mini Series Personal Alarms; ISC Four-Gas Monitors (Model TMX410); and ISC Sampling Pumps (Model SP402).

provides at least the same degree of protection as that required by the MSHA approval requirements.

Concerning MSHA's acceptance of tests and evaluations performed by recognized independent laboratories, MSHA will forgo its own tests and evaluations and accept the results of the independent laboratory for the same tests and evaluations only after the Agency has reviewed the results. In this review, MSHA will determine if the testing and evaluation were performed correctly and in accordance with the appropriate approval requirements.

Finally, under the final rulemaking, if a problem arises, MSHA will still retain full authority to revoke the approval of any product whose approval was issued using the alternate procedures of part 6 or the changes to § 7.10.

IV. COMPLIANCE COSTS

INTRODUCTION

In this chapter MSHA provides estimates of the compliance costs and cost savings for the final rule. The baseline for estimated costs and cost savings is current industry practice. The final rule will result in net cost savings to applicants requesting MSHA approval for their products.

SUMMARY OF ESTIMATED COMPLIANCE COSTS

Table IV-1 shows that the final rule will result in an annual net cost savings of about \$1.52 million.¹⁸ Applicants employing 500 or fewer workers will realize a net cost savings of \$0.66 million. Applicants employing more than 500 workers will realize a net cost savings of \$0.86 million.

The net cost savings of \$0.66 million, for applicants employing 500 or fewer workers, consist of cost savings of \$0.68 million and compliance costs of \$0.02 million. The net cost savings of \$0.86 million, for applicants employing more than 500 workers, consist of cost savings of \$0.88 million and compliance costs of \$0.02 million.

¹⁸ The total costs reported in Table IV-1, and in all other tables in this chapter, are, to the best of our knowledge, the results of accurate calculations. In some cases, however, the totals may appear to deviate from the sum or product of their component factors, but that is only because the component factors have been rounded in the tables for purposes of readability.

Table IV-1: Summary of Annual Net Cost Savings

Details	Annual Dollars		
	≤500 Workers	>500 Workers	Total
Cost Savings			
Part 6 ¹	\$19,819	\$11,195	\$31,014
Part 6 ²	\$447,750	\$430,500	\$878,250
Part 7 ³	\$213,500	\$436,500	\$650,000
Total Savings	\$681,069	\$878,195	\$1,559,264
Part 6 Costs			
6.10(a)(1)-(a)(3) ⁴	\$291	\$262	\$553
6.10(d) ⁵	\$23,500	\$19,000	\$42,500
6.10(a)(2) ⁶	\$35	\$12	\$47
6.10(e) ⁷	\$930	\$630	\$1,560
6.10(f) ⁸	\$79	\$79	\$159
Total Part 6 Costs	\$24,835	\$19,983	\$44,818
Net Savings	\$656,234	\$858,212	\$1,514,446

¹ Cost savings are for applicants that seek an MSHA approval based on MSHA approval requirements. See Table IV-3.

² Cost savings are for applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA approval requirements. See Tables IV-4 through IV-9.

³ See Table IV-15(A) and (B).

⁴ See Table IV-10.

⁵ See Tables IV-11(A) and (B).

⁶ See Table IV-12.

⁷ See Table IV-13.

⁸ See Table IV-14.

COST ANALYSIS

This chapter estimates compliance costs and cost savings for existing 30 CFR parts 18, 19, 20, 22, 23, 27, and 35 that occur as a result of the part 6 portion of this rulemaking.¹⁹ These part 6 compliance cost savings are broken down into two categories. These two categories are for applicants requesting an MSHA approval based on:

- (a) Independent laboratory testing to conform to MSHA's approval requirements; and
- (b) Independent laboratory or MSHA testing to conform to non-MSHA product safety standards that have been determined by MSHA to be equivalent to MSHA's approval requirements.

Both categories have similar costs. However, cost savings differ between the categories. Although both categories have cost savings related to applicants not having to pay for repeat testing and evaluation, category (b) can also have cost savings due to the elimination of multiple product lines.

In addition, estimated in this chapter are compliance cost savings for amended 30 CFR part 7.2 and new 30 CFR part 7.10. These cost savings will occur as a result of applicants requesting an MSHA part 7 approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements. An MSHA approval based on an equivalency determination is not currently allowed under existing part 7. However, independent or other third party laboratory testing (as well as applicant testing) to conform to MSHA's approval requirements are already allowed under existing part 7. Since applicant or third party testing already occurs under MSHA's existing part 7 approval requirements, the compliance costs that are estimated for part 6 applicants in this chapter are already being incurred by part 7 applicants. Therefore, there are no compliance costs associated with part 7 in this chapter's cost analysis.

In this chapter, part 6 compliance cost savings related to applications estimated to occur under category (a), noted above, are derived first. This is followed by determining part 6 compliance cost savings related to applications estimated to occur under category (b) noted above. Next, compliance costs are derived for part 6, category (a) and (b). Since the unit compliance costs applied to part 6 for categories (a) and (b), are the same, applications associated with categories (a) and (b) are combined when determining part 6 compliance costs. Finally, part 7 compliance cost savings are determined.

METHODOLOGY

For the final rule, all cost estimates are presented in 2001 dollars and are assumed to recur annually. Cost saving estimates due to the elimination of repeat testing and

¹⁹ Under the part 6 rulemaking, parts 33 and 36 applicants also will have the option to have independent laboratory testing to conform to MSHA's approval requirements, or independent laboratory or MSHA testing to conform to non-MSHA product safety standards that are equivalent to MSHA's approval requirements. However, no compliance costs or cost savings have been estimated for parts 33 and 36 in this PREA because MSHA does not anticipate that, in the near future, applicants will file any part 33 and 36 applications that involve part 6.

evaluation, or multiple product lines were supplied by MSHA's Approval and Certification Center (A&CC). In the PREA that accompanied the 2002 proposed rule, labor rates used to determine compliance costs for applicant employees were based on a weighted average of 2000 coal mine wage rates and M/NM mine wage rates,²⁰ and then inflated by 2.0 percent to reflect 2001 wage rates.²¹ The wage rates were weighted based on the number of miners in the coal and M/NM industry. After the 2002 proposed rule was published, MSHA received final 2001 wage rate data and will use this updated data to derive compliance costs in this REA that accompanies the final rule. As in the 2002 proposed rule, the updated 2001 wage rates are weighted based on the number of miners in the coal and M/NM industry. The updated 2001 wage rates used for this analysis are \$19.27 per hour for a clerical worker and \$52.22 per hour for a supervisor.²² These wage rates include benefits (which contain social security, unemployment insurance, and workers' compensation), but do not reflect overtime pay. For convenience, MSHA will refer to applicant "compensation" in this REA as "wages," where that term is understood to include benefits.

PART 6 - COMPLIANCE COST SAVINGS FOR APPLICANTS REQUESTING AN MSHA APPROVAL BASED ON MSHA'S APPROVAL REQUIREMENTS

The part 6 final rule allows an applicant to file a product approval application that includes independent laboratory test and evaluation results that MSHA may accept in lieu of performing its own tests and evaluations. When this occurs, applicants will derive cost savings because they will not have to pay MSHA to repeat tests and evaluations already performed by independent laboratories.

Under the final rule, MSHA will expect to receive product approval applications that include test and evaluation results from independent laboratories using some of the same tests and evaluations the Agency uses under its current approval requirements. It is unlikely that MSHA will receive applications including test and evaluation results from independent laboratories for many product lines (e.g., explosion-proof enclosures) because the test and evaluation requirements used under other non-MSHA standards are not necessarily the same as MSHA's current requirements. However, MSHA does anticipate receiving applications containing intrinsic safety test and evaluation results from independent laboratories because the intrinsic safety requirements they use are the same as MSHA's in many respects.

²⁰ Developing a single set of wage rates for MSHA applicants is problematic because they are a heterogeneous group operating in a wide range of industries. Therefore, in the PREA, wage rates for the mining industry were used as a surrogate for applicant employee wage rates. The wage rates for the mine industry were derived from Western Mine Engineering Inc. U.S. Coal Mine Salaries, Wages, and Benefits and U.S. Metal and Industrial Mineral Mine Salaries, Wages, and Benefits. 2000 Survey Results. Spokane, Washington. 2000.

²¹ The 2.0 percent 12-month inflation factor was obtained from the October 2001 Percent Changes in CPI for Urban Wage Earners and Clerical Workers (CPI-W). U.S. Department of Labor, Bureau of Labor Statistics. Consumer Price Index October 2001.

²² The 2001 wage rates used in this REA were derived from Western Mine Engineering Inc. U.S. Coal Mine Salaries, Wages, and Benefits and U.S. Metal and Industrial Mineral Mine Salaries, Wages, and Benefits. 2001 Survey Results. Spokane, Washington. 2001.

MSHA reviewed approval applications it received for the last 6 years (1996-2001) in order to estimate the types of tests and evaluations that could be performed by independent laboratories. With respect to its current approval requirements, a review of the 1996-2001 data suggest that MSHA will receive applications containing an independent laboratory’s “intrinsic safety” test and evaluation results that MSHA could accept under 30 CFR parts 18, 20, 22, and 23. Although it is possible to receive applications containing an independent laboratory’s intrinsic safety test and evaluation results under CFR parts 19 and 27, the Agency has seen very little activity under those parts based on its review of the 1996-2001 data. Therefore, MSHA does not expect to receive any such applications under CFR parts 19 and 27. With respect to MSHA’s current approval regulations, non-MSHA laboratories already perform part 7 testing, and parts 33, 35, and 36 do not have intrinsic safety requirements because they are related to non-electrical products lines.

Table IV-2 shows the kinds of intrinsic safety tests and evaluations that, under the final rule, MSHA anticipates will be performed by independent laboratories under 30 CFR parts 18, 20, 22, and 23.

**Table IV-2: Anticipated Tests and Evaluations
Performed By Independent Laboratories**

30 CFR Part	Tests and Evaluations
Part 18	Evaluation of Intrinsic Safety, Surface Temperature Test, Battery Flash Current Test, Spark Ignition Test, Current Limiting Resistor Test, Drop Test, Review of Operation Specifications, and High Potential Test
Part 20	Safety Test in Gas, Drop Test, Spark Ignition Test, Surface Temperature Test, and Battery Flash Current Test
Part 22	Evaluation of Intrinsic Safety, Battery Flash Current Test, Spark Ignition Test, Resistor Adequacy Test, Surface Temperature Test, and Performance Tests
Part 23	Evaluation of Intrinsic Safety, Spark Ignition Test, Current Limiting Resistor Test, Drop Test, Surface Temperature Test, and Battery Flash Current Tests

Based on the average number of parts 18, 20, 22, and 23 applications filed annually for the years 1996-2001, MSHA anticipates that, under the final rule, applicants employing 500 or fewer workers will file nine applications annually seeking an MSHA approval based on independent laboratory testing to conform to MSHA approval requirements. The nine applications will consist of six part 18 applications and one application each for parts 20, 22, and 23. With respect to applicants employing more than 500 workers, MSHA expects three applications annually will seek an MSHA

approval based on independent laboratory testing to conform to MSHA approval requirements. The three applications will consist of two part 18 applications and one part 23 application.

In addition to the above estimates, the final rule will cause some manufacturers that have never applied for a MSHA product approval to apply for one now. For purposes of this analysis, these manufacturers will hereafter be referred to as “new applicants.” Since these new applicants have never filed for an MSHA product approval, there is no past history on which to base annual projections resulting from the final rule. To develop the estimate of the number of new applicants, the A&CC reviewed the approved products listings for a major Independent Laboratory, Factory Mutual, and identified those products which might have application to the mining industry. Of these, A&CC assumed that 10 percent each year would have new product approval applications filed with the A&CC. Based on these assumptions, MSHA anticipates new applicants employing 500 or fewer workers will file one part 18 intrinsic safety (IS) application annually seeking MSHA approval based on independent laboratory testing to conform to MSHA approval requirements. With respect to applicants that employ more than 500 workers, MSHA expects three new applications annually seeking an MSHA approval based on independent laboratory testing to conform to MSHA approval requirements. The three applications will consist of one application each for parts 18(IS), 20 and 23.

Therefore, for applicants employing 500 or fewer workers, MSHA anticipates a total of ten applications consisting of seven part 18 applications, and one application each for parts 20, 22, and 23. For applicants employing more than 500 workers, the Agency anticipates a total of six applications consisting of three part 18 applications, one part 20 application, and two part 23 applications.

For applicants employing 500 or fewer workers and for those employing more than 500 workers, MSHA estimates the cost savings associated with the elimination of repeat testing will be the same. The cost savings associated with the elimination of repeat testing is estimated to be \$1,760 per part 18 application; \$1,195 per part 20 application; \$3,944 per part 22 application; and \$2,360 per part 23 application. The preceding cost savings estimates, as calculated by A&CC, reflect the average hours saved per application, by 30 CFR part, valued at MSHA’s current cost per approval hour.

Tables IV-3 provides the annual cost savings, both to applicants employing 500 or fewer workers and to those employing more than 500 workers, associated with the elimination of repeat testing for applications that seek an MSHA approval based on independent laboratory testing to conform to MSHA approval requirements.²³

²³ This rule does not eliminate all testing and evaluation costs associated with applicants seeking an MSHA approval for their products. There still may be some tests and evaluations that MSHA must conduct (e.g. dust testing of products). However, these tests and evaluations are not a cost of this rule because the applicant would need to pay for them whether or not the rule becomes effective.

Table IV-3: Annual Cost Savings Related to the Elimination of Repeat Testing *

(a)	(b)	(c)	(d)
Parts	Approval Applications	Cost Savings per Application	Total Annual Cost Savings ^a
FOR APPLICANT EMPLOYING ≤500 WORKERS			
18	7	\$1,760	\$12,320
20	1	\$1,195	\$1,195
22	1	\$3,944	\$3,944
23	1	\$2,360	\$2,360
Sub-Total	10		\$19,819
FOR APPLICANT EMPLOYING >500 WORKERS			
18	3	\$1,760	\$5,280
20	1	\$1,195	\$1,195
23	2	\$2,360	\$4,720
Sub-Total	6		\$11,195
Grand Total	16		\$31,014

* Cost savings are for applicants that seek an MSHA approval based on MSHA approval requirements.

^a Col. (d) = Col. (b) x Col. (c).

PART 6 - COMPLIANCE COST SAVINGS FOR APPLICANTS REQUESTING AN MSHA APPROVAL BASED ON NON-MSHA PRODUCT SAFETY STANDARDS

Under existing 30 CFR parts 18, 19, 20, 22, 23, 27 and 35, MSHA anticipates that applicants will file applications under part 6 seeking an MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. These applications are expected to generate both compliance costs and cost savings. The expected cost savings will differ depending on the specific 30 CFR part affected. The cost savings could include the elimination of either multiple product lines, repeat testing, or both. MSHA expects that applicants under the parts specified below will seek an MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. The number of applications affected and the cost savings per application were developed by staff at MSHA's

Approval and Certification Center (A&CC) based on their experience and discussions with manufacturers.²⁴

Most of the following estimates for anticipated equivalency applications for parts 18, 19, 20, 22, 23, 27 and 35 are based on A&CC review of applications filed during 1996 through 2001. However, for parts 18(IS)[Intrinsic Safety], 20, 23 and 35, the final rule could induce manufacturers that have never applied for an MSHA approval to do so now. This could occur if certain non-MSHA product safety standards (e.g. UL, FM and IEC) were determined by MSHA to be equivalent. As noted earlier, for purposes of this analysis, these manufacturers will be known as “new applicants.” Since these new applicants have never filed for an MSHA product approval, there is no past history on which to base annual projections resulting from the final rule. Therefore, we have based the following projections of annual applications by new applicants on A&CC’s experience and knowledge. In addition, the cost savings estimates that follow are based on A&CC’s knowledge, past experience, and discussions with manufacturers.

Part 18

MSHA anticipates that, under the final rule, applicants employing 500 or fewer workers will file 33 applications annually seeking part 18 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA’s approval requirements. Only one of the 33 applications will be filed by a new applicant. The 33 applications will consist of eight part 18(XP) applications, which concern explosion-proof enclosures; seven part 18(IS) applications, which concern intrinsic safety; and 18 part 18(FRM) applications, which concern flame resistant materials (mostly conveyor belts).

Of the eight part 18(XP) applications, five applications will involve cost savings due to the elimination of both multiple product lines and repeat testing; two applications will involve cost savings due to the elimination of multiple product lines only; and one application will involve cost savings due to the elimination of repeat testing only. Six of the seven part 18(IS) applications will involve cost savings due to the elimination of both multiple product lines and repeat testing. One part 18(IS) application will be filed by a new applicant and will involve cost savings due to the elimination of repeat testing only. Of the 18 part 18(FRM) applications, nine applications will involve cost savings due to the elimination of both multiple product lines and repeat testing, and the remaining nine applications will involve cost savings due to the elimination of repeat testing only.

Part 18(XP) cost savings per application for the elimination of multiple product lines is estimated to be between \$1,000 and \$37,000, for an average of \$19,000. Part 18(XP) cost savings per application for the elimination of repeat testing is estimated

²⁴ It must be emphasized that such applications could not be filed until MSHA has first determined that a non-MSHA product safety standard is equivalent and has published notice of this equivalency determination in the Federal Register. Only after a particular non-MSHA product safety standard has been determined to be equivalent could an applicant ask that MSHA approval be based on the non-MSHA standards.

to be between \$4,000 and \$5,000, for an average of \$4,500. Part 18(IS) cost savings per application for the elimination of multiple product lines is estimated to be between \$5,000 and \$40,000, for an average of \$22,500. Part 18(IS) cost savings per application for the elimination of repeat testing is estimated to be between \$1,000 and \$3,000, for an average of \$2,000. Part 18(FRM) cost savings per application for the elimination of multiple product lines is estimated to be between \$5,000 and \$10,000, for an average of \$7,500. Part 18(FRM) cost savings per application for the elimination of repeat testing is estimated to be about \$1,000.

With respect to the equivalency portion of the final rule, Table IV-4(A) provides the estimated part 18 cost savings for applicants employing 500 or fewer workers.

Table IV-4(A): Part 18 Annual Cost Savings Related to Elimination of Multiple Product Lines and Repeat Testing *
(For Applicants Employing 500 or Fewer Workers)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Part 18 **	Annual Applications Related to the Elimination of			Annual Cost Savings Related to Applications That Eliminate			Total Annual Costs Savings ^d
	Multiple Product Lines	Repeat Testing	Multiple Product Lines & Repeat Testing	Multiple Product Lines ^a	Repeat Testing ^b	Multiple Product Lines & Repeat Testing ^c	
18(XP)	2	1	5	\$38,000	\$4,500	\$117,500	\$160,000
18(IS)	0	1	6	\$0	\$2,000	\$147,000	\$149,000
18(FRM)	0	9	9	\$0	\$9,000	\$76,500	\$85,500
Total	2	11	20	\$38,000	\$15,500	\$341,000	\$394,500

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

** XP = explosion-proof enclosures, IS = intrinsic safety, FRM = flame resistant materials (mostly conveyor belts).

^a \$38,000 = 2 applications x \$19,000 multiple product line savings per application.

^b \$4,500 = 1 application x \$4,500 repeat testing savings per application.

\$2,000 = 1 application x \$2,000 repeat testing savings per application.

\$9,000 = 9 applications x \$1,000 repeat testing savings per application.

^c \$117,500 = 5 applications x (\$19,000 multiple product line savings per application + \$4,500 repeat testing savings per application).

\$147,000 = 6 applications x (\$22,500 multiple product line savings per application + \$2,000 repeat testing savings per application).

\$76,500 = 9 applications x (\$7,500 multiple product line savings per application + \$1,000 repeat testing savings per application).

^d Col. (h) = Col. (e) + Col. (f) + Col. (g).

MSHA anticipates that, under the final rule, applicants employing more than 500 workers will file 31 applications annually seeking part 18 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. Only one of the 31 applications will be filed by a new applicant. The 31 applications will consist of 14 part 18(XP) applications, which concern explosion-proof enclosures; two part 18(IS) applications, which concern intrinsic safety; and 15 part 18(FRM) applications, which concern flame resistant materials (mostly conveyor belts).

Of the 14 part 18(XP) applications, ten applications will involve cost savings due to the elimination of both multiple product lines and repeat testing; three applications will involve cost savings due to the elimination of multiple product lines only; and one application will involve cost savings due to the elimination of repeat testing only. One of the two part 18(IS) application will involve cost savings due to the elimination of multiple product lines and repeat testing. The remaining one part 18(IS) application will be filed by a new applicant and will involve cost savings due to the elimination of repeat testing only. Of the 15 part 18(FRM) applications, six applications will involve cost savings due to the elimination of both multiple product lines and repeat testing, and the remaining nine applications will involve cost savings due to the elimination of repeat testing only.

The part 18(XP), part 18(IS), and part 18(FRM) cost savings per application for applicants that employ more than 500 workers are the same as for applicants that employ 500 or fewer workers.

With respect to the equivalency portion of the final rule, Table IV-4(B) provides the estimated part 18 cost savings for applicants employing more than 500 workers.

Table IV-4(B): Part 18 Annual Cost Savings Related to Elimination of Multiple Product Lines and Repeat Testing *
(For Applicants Employing More Than 500 Workers)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Part 18 **	Annual Applications Related to the Elimination of			Annual Cost Savings Related to Applications That Eliminate			Total Annual Costs Savings ^d
	Multiple Product Lines	Repeat Testing	Multiple Product Lines & Repeat Testing	Multiple Product Lines ^a	Repeat Testing ^b	Multiple Product Lines & Repeat Testing ^c	
18(XP)	3	1	10	\$57,000	\$4,500	\$235,000	\$296,500
18(IS)	0	1	1	\$0	\$2,000	\$24,500	\$26,500
18(FRM)	0	9	6	\$0	\$9,000	\$51,000	\$60,000
Total	3	11	17	\$57,000	\$15,500	\$310,500	\$383,000

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

** XP = explosion-proof enclosures, IS = intrinsic safety, FRM = flame resistant materials (mostly conveyor belts).

^a \$57,000 = 3 applications x \$19,000 multiple product line savings per application.

^b \$4,500 = 1 application x \$4,500 repeat testing savings per application.
 \$2,000 = 1 application x \$2,000 repeat testing savings per application.
 \$9,000 = 9 applications x \$1,000 repeat testing savings per application.

^c \$235,000 = 10 applications x (\$19,000 multiple product line savings per application + \$4,500 repeat testing savings per application).

\$24,500 = 1 application x (\$22,500 multiple product line savings per application + \$2,000 repeat testing savings per application).

\$51,000 = 6 applications x (\$7,500 multiple product line savings per application + \$1,000 repeat testing savings per application).

^d Col. (h) = Col. (e) + Col. (f) + Col. (g).

Parts 19 and 27

Parts 19 and 27 are being handled together because they share the following characteristics with reference to the final rule: they will only apply to applicants that employ 500 or fewer workers; each part will only have one application (seeking an MSHA approval based on non-MSHA approval requirements that are deemed equivalent to MSHA’s approval requirements); and the cost savings will involve only the elimination of repeat testing.

Part 19 cost savings per application are estimated to be between \$1,500 and \$3,000, for an average of \$2,250. On average, part 27 cost savings per application are estimated to be \$20,000.

With respect to the equivalency portion of the final rule, Table IV-5 provides parts 19 and 27 estimated cost savings for applicants employing 500 or fewer workers.

**Table IV-5:
Parts 19 and 27 - Annual Cost Savings
Related to Elimination of Repeat Testing *
(For Applicants Employing 500 or Fewer Workers) ^a**

(a)	(b)	(c)	(d)
Parts	Annual Applications	Cost Savings Related to Repeat Testing per Application	Total Annual Costs Savings ^b
Part 19	1	\$2,250	\$2,250
Part 27	1	\$20,000	\$20,000

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

^a No applications are expected for these Parts for applicants that employ more than 500 workers.

^b Col. (d) = Col. (b) x Col. (c).

Part 20

One applicant employing 500 or fewer workers is expected to file a part 20 application. Also, one new applicant employing more than 500 workers is expected to file a part 20 application. On average, part 20 cost savings per application are estimated to be \$3,000.

With respect to the equivalency portion of the final rule, Table IV-6 provides the estimated part 20 cost savings for the applicant employing 500 or fewer workers and for the applicant employing more than 500 workers.

**Table IV-6:
Part 20 - Annual Cost Savings
Related to Elimination of Repeat Testing ***

(a)	(b)	(c)	(d)
Part	Annual Applications	Cost Savings Related to Repeat Testing per Application	Total Annual Costs Savings ^a
FOR APPLICANTS EMPLOYING ≤500 Workers			
20	1	\$3,000	\$3,000
FOR APPLICANTS EMPLOYING >500 Workers			
20	1	\$3,000	\$3,000
Total	2		\$6,000

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

^a Col. (d) = Col. (b) x Col. (c).

Part 22

With respect to the equivalency portion of the final rule, there are no part 22 applications anticipated for applicants employing 500 or fewer workers. MSHA anticipates an applicant employing more than 500 workers will file one application annually seeking part 22 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. This application will involve cost savings due to the elimination of repeat testing. The average cost savings per application is estimated to be \$10,000.

With respect to the equivalency portion of the final rule, Table IV-7 provides the estimated part 22 cost savings for the applicant employing more than 500 workers.

Table IV-7
Part 22 - Annual Cost Savings Related to
Elimination of Repeat Testing *

(a)	(b)	(c)	(d)
Applicant Empl. Size	Annual Applications	Cost Savings Related to Repeat Testing per Application	Total Annual Costs Savings ^a
≤500	0	\$0	\$0
>500	1	\$10,000	\$10,000
Total	1		\$10,000

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

^a Col. (d) = Col. (b) x Col. (c).

Part 23

MSHA anticipates that one applicant employing 500 or fewer workers and two applicants employing more than 500 workers will each file one application annually seeking part 23 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. A new applicant is expected to file one of the two applications filed by applicants employing more than 500 workers.

One application for the applicant employing 500 or fewer workers and one application for the applicant employing more than 500 workers will involve cost savings due to the elimination of multiple product lines only. The remaining one application for the applicant employing more than 500 workers will be for the elimination of repeat testing.

Cost savings per application for the elimination of multiple product lines is estimated to be between \$5,000 and \$30,000, for an average of \$17,500. Cost savings per application for the elimination of repeat testing is estimated to be between \$1,000 and \$3,000, for an average of \$2,000.

With respect to the equivalency portion of the final rule, Table IV-8 provides the estimated part 23 cost savings for the applicant employing 500 or fewer workers and for applicants employing more than 500 workers.

**Table IV-8
Part 23 - Annual Cost Savings Related to Elimination of
Multiple Product Lines and Repeat Testing ***

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	Annual Applications Related to the Elimination of		Annual Cost Savings Related to Applications That Eliminate		Total Annual Costs Savings ^c
	Multiple Product Lines	Repeat Testing	Multiple Product Lines ^a	Repeat Testing ^b	
<500	1	0	\$17,500	\$0	\$17,500
>500	1	1	\$17,500	\$2,000	\$19,500
Total	2	1	\$35,000	\$2,000	\$37,000

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

^a \$17,500 = 1 application x \$17,500 multiple product line savings per application

^b \$2,000 = 1 application x \$2,000 repeat testing savings per application.

^c Col. (f) = Col. (d) + Col. (e).

Part 35

MSHA anticipates that applicants employing 500 or fewer workers will file three applications annually seeking part 35 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. One application will involve cost savings due to the elimination of both multiple product lines and repeat testing. The remaining two applications will involve cost savings due to the elimination of repeat testing only.

MSHA anticipates that applicants employing more than 500 workers will file four applications annually seeking part 35 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. Two applications will involve cost savings due to the elimination of both multiple product lines and repeat testing. The remaining two application (one of which will be filed by a new applicant) will involve cost savings due to the elimination of repeat testing only.

Both for applicants employing 500 or fewer workers and for those employing more than 500 workers, the following cost savings will apply. Cost savings per application for the elimination of multiple product lines will range from \$1,000 to \$2,000, for an average of \$1,500. Cost savings per application for the elimination of repeat testing will range from \$1,000 to \$5,000, for an average of \$3,000.

With respect to the equivalency portion of the final rule, Table IV-9 provides the estimated part 35 cost savings for applicants employing 500 or fewer workers and for those employing more than 500 workers.

Table IV-9: Part 35 Annual Cost Savings Related to Elimination of Multiple Product Lines and Repeat Testing *

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	Annual Applications Related to the Elimination of		Annual Cost Savings Related to Applications That Eliminate		Total Annual Costs Savings ^c
	Repeat Testing	Multiple Product Lines & Repeat Testing	Repeat Testing ^a	Multiple Product Lines & Repeat Testing ^b	
≤500	2	1	\$6,000	\$4,500	\$10,500
>500	2	2	\$6,000	\$9,000	\$15,000
Total	4	3	\$12,000	\$13,500	\$25,500

* For applicants that seek an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements.

^a \$6,000 = 2 applications x \$3,000 repeat testing savings per application.
\$6,000 = 2 applications x \$3,000 repeat testing savings per application.

^b \$4,500 = 1 application x (\$1,500 multiple product line savings per application + \$3,000 repeat testing savings per application).
\$9,000 = 2 applications x (\$1,500 multiple product line savings per application + \$3,000 repeat testing savings per application).

^c Col. (f) = Col. (d) + Col. (e).

PART 6 – COMPLIANCE COSTS

In the following discussion, MSHA develops estimates of applicant compliance costs, by provision, associated with the final rule. Note that these costs will be the same for applicants requesting an MSHA approval based on MSHA approval requirements and for applicants requesting an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA approval requirements.

Section 6.10(a)(1) through (a)(3) Compliance Costs

Under §6.10, applicants seeking MSHA product approval will have to provide the information stated in paragraphs (a)(1) through (a)(4) for MSHA to accept testing and evaluation performed by an independent laboratory. Currently, applications require only information requested in paragraph (a)(4). Information requested in paragraphs (a)(1)

through (a)(3) is needed for the final rule because MSHA will no longer be performing all the tests and evaluations associated with the approval application.

Paragraph (a)(1) requires “written evidence of the laboratory’s independence and current recognition by a laboratory accrediting organization.” Paragraph (a)(2) requires “a complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements.” Paragraph (a)(3) requires “identification of components or features of the product that are critical to the safety of the product.” The information in paragraphs (a)(1) through (a)(3) will be completed by the independent laboratory and supplied to the applicant, who will then send it to MSHA.

As noted earlier, some test and evaluation requirements under non-MSHA product safety standards used by independent laboratories are the same as MSHA’s current approval requirements. Some manufacturers seeking MSHA approval routinely have such tests and evaluations performed by an independent laboratory when seeking a non-MSHA approval or listing. Generally, under the circumstances of this rulemaking, before requesting an MSHA product approval either based on MSHA’s approval requirements or non-MSHA product safety standards that are equivalent to MSHA’s approval requirements, applicants will already have had an independent laboratory perform some portion of the tests and evaluations that are also needed to obtain an MSHA product approval. It is with regard to these test and evaluation results that MSHA requires the data requested in paragraphs (a)(1) through (a)(3). The costs of the tests and evaluations performed by an independent laboratory will have already occurred before the applicant files an MSHA product approval application. Therefore, the only costs to applicants associated with §6.10(a)(1) through (a)(3) will be those related to passing on the information required in these provisions to MSHA that the applicant has received from the independent laboratory.

Table IV-3 shows a total of 16 applications annually (10 applications for those employing 500 or fewer workers and six applications for those employing more than 500 workers) in which applicants will opt to file under part 6 requesting an MSHA approval based on independent laboratory testing to conform to MSHA approval requirements. Tables IV-4 through IV-9 show a total of 79 applications (40 applications for those employing 500 or fewer workers and 39 applications for those employing more than 500 workers) in which applicants will opt to file annually under part 6 seeking an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA’s approval requirements. Therefore, there will be an annual total of 95 anticipated applications, 50 (40 + 10) applications associated with applicants employing 500 or fewer workers and 45 (39 + 6) applications associated with applicants employing more than 500 workers, for which the information requested in paragraphs (a)(1) through (a)(3) will have to be sent by the applicant to MSHA.

MSHA estimates that a clerical worker, earning \$19.27 per hour, will take 15 minutes (0.25 hours) per application to prepare and send the data requested in paragraphs (a)(1) through (a)(3). This time estimate is based on A&CC’s experience in preparing and sending data as part of its approval review process. Postage for the applicant to send MSHA the data requested in paragraphs (a)(1) through (a)(3) is estimated to be \$1 per application.

Table IV-10 shows applicants' annual costs to provide the information requested in §6.10 paragraphs (a)(1) through (a)(3).

**Table IV-10: Section 6.10 (a)(1) Through (a)(3)
Annual Costs Related to Providing Data to MSHA**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	No. of Annual Approval Applications	Time to Prepare & Send Data (hrs.)	Clerical Wage Rate per hr.	Postage	Total Annual Costs ^b
≤500	50	0.25	\$19.27	\$1	\$291
>500	45	0.25	\$19.27	\$1	\$262
Total	95				\$553

^a Col. (f) = [Col. (b) x Col. (c) x Col. (d)] + [Col. (b) x Col. (e)].

Section 6.10(d) Compliance Costs

Paragraph (d) states that after review of the information required under paragraphs (a)(1) through (a)(4), MSHA will notify the applicant if additional information and testing is required. Either MSHA or an independent laboratory will conduct the additional or repeated tests. In either case, the applicant will have to assume the expense. In addition, if an independent laboratory were to conduct the tests, MSHA will have the option of observing the tests. If MSHA chooses to observe an additional or repeat test performed by an independent laboratory, the applicant will have to pay for MSHA's travel expenses.

For applicants employing 500 or fewer workers, MSHA estimates that 16 applications annually will involve additional or repeat testing. The 16 applications will consist of ten part 18(IS) applications, two part 18(FRM) applications, and one application each for parts 18(XP), 22, 23, and 35. Of these applications, MSHA estimates that six applications annually will involve MSHA's observing additional or repeat testing: two part 18(FRM) applications and one application each for parts 18(XP), 18(IS), 22, and 35.

Part 18(XP) testing costs per application are estimated to be between \$4,000 and \$5,000 per application, for an average cost of \$4,500. Part 22 testing costs are estimated to be \$2,000 per application. Part 18(FRM) testing costs are estimated to be \$1,000 per application. Parts 18(IS), 23, and 35 each have testing costs estimated to be \$500 per

application. Travel costs per application involving MSHA’s observation of testing are estimated to be between \$1,000 and \$2,000, for an average of \$1,500.²⁵

Table IV-11(A) shows annual costs for additional testing required by §6.10(d) for applicants employing 500 or fewer workers.

**Table IV-11(A): Section 6.10 (d)
Annual Costs Related to Additional or Repeat Testing
(For Applicants Employing 500 or Fewer Workers)**

(a)	(b)	(c)	(d)	(e)	(f)
Parts	Annual No. of Applications Where MSHA Expects That Additional or Repeat Tests are Needed	Per Application Cost of Tests	Annual No. of Applications Involving Additional or Repeat Tests That MSHA Will Observe	Per Application Cost Related to Observing Tests^a	Total Annual Costs^b
18(XP)	1	\$4,500	1	\$1,500	\$6,000
18(IS)	10	\$500	1	\$1,500	\$6,500
18(FRM)	2	\$1,000	2	\$1,500	\$5,000
22	1	\$2,000	1	\$1,500	\$3,500
23	1	\$500	0	\$1,500	\$500
35	1	\$500	1	\$1,500	\$2,000
Total	16		6		\$23,500

^a These are travel costs, such as airplane expenses, lodging expenses, etc...

^b Col. (f) = [Col. (b) x Col. (c)] + [Col. (d) x Col. (e)].

For applicants employing more than 500 workers, MSHA estimates that 11 applications annually will involve additional or repeat testing. The 11 applications will consist of four part 18(IS) applications, two applications each for parts 18(XP) and 18(FRM), and one application each for parts 22, 23, and 35. Of these applications, MSHA estimates that two applications annually will involve MSHA’s observing additional or repeat testing: one application each for parts 18(XP) and 18(FRM).

For all applicable parts, testing costs for applicants employing more than 500 workers are expected to be the same per application as noted above for applicants employing 500 or fewer workers. Travel costs involving MSHA’s observation of testing are also estimated to be the same per application as noted above for applicants employing 500 or fewer workers.

²⁵ The travel estimate takes into account both foreign and domestic travel.

Table IV-11(B) shows applicants' annual costs for additional testing required by §6.10(d) for applicants employing more than 500 workers.

**Table IV-11(B): Section 6.10 (d)
Annual Costs Related to Additional or Repeat Testing
(For Applicants Employing More Than 500 Workers)**

(a)	(b)	(c)	(d)	(e)	(f)
Parts	Annual No. of Applications Where MSHA Expects That Additional or Repeat Tests are Needed	Per Application Cost of Tests	Annual No. of Applications Involving Additional or Repeat Tests That MSHA Will Observe	Per Application Cost Related to Observing Tests ^a	Total Annual Costs ^b
18(XP)	2	\$4,500	1	\$1,500	\$10,500
18(IS)	4	\$500	0	\$1,500	\$2,000
18(FRM)	2	\$1,000	1	\$1,500	\$3,500
22	1	\$2,000	0	\$1,500	\$2,000
23	1	\$500	0	\$1,500	\$500
35	1	\$500	0	\$1,500	\$500
Total	11		2		\$19,000

^a These are travel costs, such as airplane expenses, lodging expenses, etc...

^b Col. (f) = [Col. (b) x Col. (c)] + [Col. (d) x Col. (e)].

Section 6.10(a)(2) Compliance Costs Associated with §6.10(d)

If an independent laboratory conducts any additional or repeat testing, then the applicant must send the test results to MSHA. This is true even if MSHA observes the testing performed by the independent laboratory. However, if MSHA performs additional or repeat testing itself, then it is not necessary for the applicant to send in the test results to MSHA. Sending additional or repeat testing results to MSHA is covered under §6.10(a)(2). Information concerning §6.10(a)(1) and (a)(3) that was sent to MSHA with the original approval application does not have to be sent again as a result of any additional or repeat testing.

For applicants employing 500 or fewer workers, Table IV-11(A) shows 16 applications that will involve additional or repeat testing. Of these 16 applications, MSHA estimates that six applications will involve testing performed by an independent laboratory.

For applicants employing more than 500 workers, Table IV-11(B) shows 11 applications that will involve additional or repeat testing. Of these 11 applications, MSHA estimates that two applications will involve testing performed by an independent laboratory.

MSHA estimates that a clerical worker, earning \$19.27 per hour, will take 15 minutes (0.25 hours) per application to prepare and send the test results requested in §6.10(a)(2). Postage to send MSHA the data requested in paragraphs (a)(2) is estimated to be \$1 per application.

Table IV-12 show applicants’ annual costs to provide the information requested in §6.10(a)(2) for the additional or repeat testing required under §6.10(d).

**Table IV-12: Section 6.10 (a)(2)
Annual Costs Related to Providing Data to MSHA
for Additional or Repeat Testing Under Section 6.10(d)**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	No. of Annual Approval Applications	Time to Prepare & Send Data (hrs.)	Clerical Wage Rate per hr.	Postage	Total Annual Costs ^a
<500	6	0.25	\$19.27	\$1	\$35
>500	2	0.25	\$19.27	\$1	\$12
Total	8				\$47

^a Col. (f) = [Col. (b) x Col. (c) x Col. (d)] + [Col. (b) x Col. (e)].

Section 6.10(e)

Paragraph (e) of §6.10 requires that, upon request by MSHA, but not more than once a year, except for cause, approval holders of products approved based on independent laboratory testing and evaluation must make such products available for audit at a mutually agreeable site at no cost to MSHA. If the product to be audited is sent to MSHA, then the approval holder must pay for sending the product to MSHA. In addition, if the audit takes place at a mutually agreeable site where there is not currently a product then the approval holder must also pay for shipping the product to the agreed upon site.

For applicants employing 500 or fewer workers, MSHA estimates that the Agency will annually audit 31 applications where the applicant will need to ship the product to the audit site. These 31 applications consist of: six part 18(IS) applications, 18 part

18(FRM) applications, three part 35 applications, and one application each for parts 19, 20, 23 and 27.

For applicants employing more than 500 workers, MSHA estimates that the Agency will annually audit 21 applications where the applicant will need to ship the product to the audit site. These 21 applications consist of: one part 18(IS) application, 15 part 18(FRM) applications, three part 35 applications, and one application each for parts 22 and 23.

MSHA estimates that to send a product, audited under §6.10(e), to the Agency will cost between \$10 and \$50, for an average cost of \$30.

Table IV-13 shows applicants' annual costs related to products audited under §6.10(e).

**Table IV-13: Section 6.10(e)
Annual Costs for Product Audit Requests by MSHA**

(a)	(b)	(c)	(d)
Parts	Annual No. of Applications Where Audits Will Cause Product to be Shipped by Applicant	Average Cost per Application for Products to be Shipped	Total Annual Costs ^a
FOR APPLICANTS EMPLOYING ≤ 500 WORKERS			
18(IS) & (FRM)	24	\$30	\$720
19	1	\$30	\$30
20	1	\$30	\$30
23	1	\$30	\$30
27	1	\$30	\$30
35	3	\$30	\$90
<500 Total	31		\$930
FOR APPLICANTS EMPLOYING > 500 WORKERS			
18(IS) & (FRM)	16	\$30	\$480
22	1	\$30	\$30
23	1	\$30	\$30
35	3	\$30	\$90
>500 Total	21		\$630
ALL APPLICANTS			
Total	52		\$1,560

^a Col. (d) = Col. (b) x Col. (c).

Section 6.10(f)

Paragraph (f) of §6.10 states that, once the product is approved, the approval holder must notify MSHA of all product defects of which the approval holder is aware. MSHA expects that such defects will occur very infrequently. MSHA estimates that

annually one applicant employing 500 or fewer workers and one applicant employing more than 500 workers will notify MSHA of a defective approved product. A supervisor earning \$52.22 per hour is estimated to take 1.5 hours to notify MSHA in writing about a product defect. This time estimate is based on MSHA's own experience preparing and sending similar notifications letters. Postage for each notification letter is estimated to be \$1.

Table IV-14 shows the annual costs to notify MSHA of product defects required by §6.10(f).

**Table IV-14: Section 6.10 (f)
Annual Costs Related to Notification of Defective Products**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	Annual No. of Times That Applicant Will Notify MSHA of Product Defects	Time to Prepare Notification Letter (hrs.)	Superv. Wage Rate per hr.	Postage	Total Annual Costs^a
<500	1	1.5	\$52.22	\$1	\$79
>500	1	1.5	\$52.22	\$1	\$79
Total	2				\$159

^a Col. (f) = [Col. (b) x Col. (c) x Col. (d)] + [Col. (b) x Col. (e)].

PART 7 – COMPLIANCE COST SAVINGS FOR APPLICANTS REQUESTING AN MSHA APPROVAL BASED ON EQUIVALENT NON-MSHA PRODUCT SAFETY STANDARDS

Part 7 will be modified to amend existing § 7.2 and to add a new § 7.10. These modifications will allow applicants to request a part 7 MSHA approval based on equivalent non-MSHA product safety standards.²⁶

Under part 7, there are several sub-parts where applicants are anticipated to file applications seeking an MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements. This will result in part 7 cost savings for the applicant, which could include the elimination of either multiple product

²⁶ It must be emphasized that such application could not be filed until MSHA has first determined that a non-MSHA product safety standard was equivalent and has published notice of this equivalency determination in the Federal Register. Only after a particular non-MSHA product safety standard has been determined to be equivalent could an applicant ask that the MSHA approval be based on the non-MSHA standards.

lines, repeat testing, or both. MSHA expects that applicants under the part 7 sub-parts specified below will seek an MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. The number of applications affected and the cost savings per application were developed by staff at MSHA's Approval and Certification Center (A&CC) based on their own expertise and discussions with manufacturers.

MSHA anticipates that applicants employing 500 or fewer workers will file 35 applications annually seeking part 7 MSHA approval based on non-MSHA product safety standards that are deemed equivalent to MSHA's approval requirements. The 35 applications will consist of one subpart 7E application, two subpart 7F applications, seven subpart 7J applications, and 25 subpart 7K applications.²⁷

The one subpart 7E application and the two subpart 7F applications will involve cost savings due to the elimination of multiple product lines and repeat testing. Five of the seven subpart 7J applications will involve cost savings due to the elimination of multiple product lines and repeat testing, while the remaining two subpart 7J applications will involve cost savings due only to the elimination of multiple product lines. All 25 subpart 7K applications will involve cost savings due to the elimination of repeat testing only.

Subpart 7E cost savings per application for the elimination of multiple product lines or for the elimination of repeat testing is estimated to be between \$4,000 and \$6,500, for an average of \$5,250. Subpart 7F cost savings per application for the elimination of multiple product lines is estimated to be between \$8,000 and \$16,000, for an average of \$12,000. The subpart 7F cost savings per application for the elimination of repeat testing is estimated to be between \$6,500 and \$13,000, for an average of \$9,750. Subpart 7J cost savings per application for the elimination of multiple product lines is estimated to be between \$2,000 and \$30,000, for an average of \$16,000. The subpart 7J cost savings per application for the elimination of repeat testing is estimated to be between \$3,000 and \$6,000, for an average of \$4,500. The subpart 7K cost savings per application for the elimination of repeat testing is estimated to be \$1,000.

With respect to the equivalency portion of the final rule, Table IV-15 (A) provides the estimated part 7 cost savings for applicants employing 500 or fewer workers.

²⁷ Subpart 7E applications are for diesel engines intended for use in underground coal mines; subpart 7F applications are for diesel power packages intended for use in areas of underground coal mines where permissible electric equipment is required; subpart 7J applications are for electric motor assemblies; and subpart 7K applications are for electric cables, signaling cables, and cable splice kits. Although amended § 7.2 and the new § 7.10 apply to all part 7 subparts, MSHA anticipates only applications based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements in the subparts noted above.

Table IV-15(A): Part 7 Annual Cost Savings Related to Elimination of Multiple Product Lines and Repeat Testing *
(For Applicants Employing 500 or Fewer workers)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Part 7	Annual Applications Related to the Elimination of			Annual Cost Savings Related to Applications That Eliminate			Total Annual Costs Savings ^d
	Multiple Product Lines	Repeat Testing	Multiple Product Lines & Repeat Testing	Multiple Product Lines ^a	Repeat Testing ^b	Multiple Product Lines & Repeat Testing ^c	
7E(a)	0	0	1	\$0	\$0	\$10,500	\$10,500
7F	0	0	2	\$0	\$0	\$43,500	\$43,500
7J	2	0	5	\$32,000	\$0	\$102,500	\$134,500
7K	0	25	0	\$0	\$25,000	\$0	\$25,000
Total	2	25	8	\$32,000	\$25,000	\$156,500	\$213,500

* For applicants that seek an MSHA approval based on non-MSHA approval requirements that are equivalent to MSHA's approval requirements.

^a \$32,000 = 2 applications x \$16,000 multiple product line savings per application.

^b \$25,000 = 25 applications x \$1,000 repeat testing savings per application.

^c \$10,500 = 1 application x (\$5,250 multiple product line savings per application + \$5,250 repeat testing savings per application).

\$43,500 = 2 applications x (\$12,000 multiple product line savings per application + \$9,750 repeat testing savings per application).

\$102,500 = 5 applications x (\$16,000 multiple product line savings per application + \$4,500 repeat testing savings per application).

^d Col. (h) = Col. (e) + Col. (f) + Col. (g).

MSHA anticipates that applicants employing more than 500 workers will file 24 applications annually seeking part 7 MSHA approval based on non-MSHA product safety standards that are equivalent to MSHA's approval requirements. The 24 applications will consist of four subpart 7E applications, 13 subpart 7J applications, and seven subpart 7K applications.

The four subpart 7E applications will involve cost savings due to the elimination of repeat testing and multiple product lines. Eleven subpart 7J applications will involve cost savings due to the elimination of repeat testing and multiple product lines, while the remaining two subpart 7J applications will involve cost savings due to the elimination of multiple product lines only. All seven subpart 7K applications will involve cost savings due to the elimination of repeat testing only.

The subparts 7J and 7K cost savings per application for the elimination of multiple product lines and repeat testing will be the same for applicants that employ more

than 500 workers as for applicants that employ 500 or fewer workers. However, the subpart 7E cost savings per application will be larger for applicants employing more than 500 workers. For applicants employing more than 500 workers, the subpart 7E cost savings per application related to the elimination of (1) repeat testing and (2) multiple product lines are each estimated to be between \$18,000 and \$25,000, for an average of \$21,500.

With respect to the equivalency portion of the rule, Table IV-15(B) provides the estimated part 7 cost savings for applicants employing more than 500 workers.

Table IV-15(B): Part 7 Annual Cost Savings Related to Elimination of Multiple Product Lines and Repeat Testing *
(For Applicants Employing More Than 500 Workers)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
	Annual Applications Related to the Elimination of			Annual Cost Savings Related to Applications That Eliminate			
	Multiple Product Lines	Repeat Testing	Multiple Product Lines & Repeat Testing	Multiple Product Lines ^a	Repeat Testing ^b	Multiple Product Lines & Repeat Testing ^c	
Part 7							Total Annual Costs Savings^d
7E(b)	0	0	4	\$0	\$0	\$172,000	\$172,000
7J	2	0	11	\$32,000	\$0	\$225,500	\$257,500
7K	0	7	0	\$0	\$7,000	\$0	\$7,000
Total	2	7	15	\$32,000	\$7,000	\$397,500	\$436,500

* For applicants that seek an MSHA approval based on non-MSHA approval requirements that are equivalent to MSHA's approval requirements.

^a \$32,000 = 2 applications x \$16,000 multiple product line savings per application.

^b \$7,000 = 7 applications x \$1,000 repeat testing savings per application.

^c \$172,000 = 4 applications x (\$21,500 multiple product line savings per application + \$21,500 repeat testing savings per application).

\$225,500 = 11 applications x (\$16,000 multiple product line savings per application + \$4,500 repeat testing savings per application).

^d Col. (h) = Col. (e) + Col. (f) + Col. (g).

FEASIBILITY

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

The final rule is technologically feasible in that applicants will no longer pay for repeat testing and evaluation, and they will be allowed to obtain approvals based on non-MSHA product safety standards that are equivalent to MSHA's standards. The final rule will make it easier for applicants to apply for an MSHA approval for their products and shorten the time period for obtaining a product approval.

The final rule is economically feasible insofar as it provides an annual net savings of \$1.52 million to applicants that apply for an MSHA product approval. The final rule imposes no costs on mine operators and will indirectly lead to savings to them in the form of safer, and possibly lower-cost, mining products.

V. REGULATORY FLEXIBILITY CERTIFICATION

INTRODUCTION

In accordance with §605 of the Regulatory Flexibility Act of 1980 as amended, MSHA has analyzed the impact of the final rule on small entities. Further, MSHA has made a determination with respect to whether or not the Agency can certify that the final rule will not have a significant economic impact on a substantial number of small entities that are covered by this rulemaking. Under the Small Business Regulatory Flexibility Act (RFA), MSHA must include in the rule a factual basis for this certification. If the final 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 ENTITY

Under the RFA, in analyzing the impact of a final rule on small entities, MSHA must use the Small Business Administration (SBA) definition for a small entity or, after consultation with the SBA Office of Advocacy, establish an alternative definition after 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). Traditionally, the Agency has also looked at the impact of its rules on a subset of mine operators with 500 or fewer employees – those with fewer than 20 employees, which the mining community refers to as “small mines.” However, this final rule directly applies to applicants who generally are manufacturers seeking to obtain an MSHA approval for their products. The final rule indirectly applies to mine operators, in that the products for which applicants seek an MSHA approval will be used in U.S. mines. Most applicants that file for an MSHA approval for their products operate in industries involved in measurement, analysis, controlling instruments, photographic instruments, commercial and industrial lighting fixtures, and conveyors. SBA’s definition of a small business for these industries is also 500 or fewer employees. Therefore, the Agency has examined the impact on applicants for MSHA approval that employ 500 or fewer employees.

MSHA has determined that the final rule will not impose a significant economic impact on a substantial number of small entities, where a small entity is defined as one with 500 or fewer employees. MSHA has certified these finding to the SBA.

FACTUAL BASIS FOR CERTIFICATION

The Agency’s analysis of impacts on “small entities” begins with a screening analysis. The screening analysis compares the estimated compliance costs of the final rule for small entities in the affected sector to the estimated revenues for the sector. When estimated compliance costs for small entities in the affected sector are less than one percent of estimated revenues, or are negative, the Agency believes it is generally

appropriate to conclude that there is no significant impact on a substantial number of small entities. When estimated compliance costs approach or exceed one percent of revenues, it tends to indicate that further analysis may be warranted.

MSHA's preliminary estimates for this final rule show that there will be cost savings (i.e., compliance costs will be negative) for applicants seeking MSHA product approval that employ 500 or fewer workers. In addition, the cost savings for applicants seeking MSHA product approval could indirectly lead to savings for small mine operators in the form of possibly safer and lower cost products, and a wider variety of mining products available to them. Therefore, MSHA concludes that the final rule will not have a significant economic impact on a substantial number of small entities covered by it.

VI. OTHER REGULATORY CONSIDERATIONS

THE UNFUNDED MANDATES REFORM ACT

For purposes of the Unfunded Mandates Reform Act of 1995, the final rule does not include any Federal mandate that may result in increased expenditures by State, local, or tribal governments, or increased expenditures by the private sector of more than \$100 million annually. There are no manufacturers of products for use in gassy underground mines that are owned or operated by any State, local, or tribal governments.

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

The final rule is not subject to Executive Order 12630, Government Actions and Interference with Constitutionally Protected Property Rights, because it does not involve implementation of a policy with takings implications.

EXECUTIVE ORDER 12988: CIVIL JUSTICE REFORM

The Agency has reviewed Executive Order 12988, Civil Justice Reform, and determined that the final rule will not unduly burden the Federal court system. The final rule has been written so as to provide a clear legal standard for affected conduct, and has been reviewed carefully to eliminate drafting errors and ambiguities.

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

In accordance with Executive Order 13045, MSHA has evaluated the environmental health and safety effects of the final rule on children. The Agency has determined that the final rule will not have an adverse impact on children.

EXECUTIVE ORDER 13132: FEDERALISM

MSHA has reviewed the final rule in accordance with Executive Order 13132 regarding federalism and has determined that it will not have “federalism implications.” The final rule will 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.” There are no manufacturers of products for use in gassy underground mines that are owned or operated by any state or local governments.

EXECUTIVE ORDER 13175: CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

MSHA certifies that the final rule will not impose substantial direct compliance costs on Indian tribal governments. No Indian tribal governments manufacture products for use in gassy underground mines.

EXECUTIVE ORDER 13211: ENERGY

In accordance with Executive Order 13211, MSHA has reviewed the final rule for its energy impacts and has determined that the final rule will not have any adverse effects on energy supply, distribution, or use.

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

In accordance with Executive Order 13272, MSHA has thoroughly reviewed the final 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 REA, MSHA has determined that the final rule will 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 estimate the annual burden hours and related costs that will be borne by those covered by the final rule. The costs in this chapter have already been derived in Chapter IV of this REA. However, costs in this chapter are estimated only in relation to the burden hours that the final rule will impose on those covered by the final rule. Any costs derived in Chapter IV that do not have burden hours associated with them do not appear in this chapter.

Table VII-1 summarizes the total annual burden hours and costs associated with the part 6 final rule. The final rule will impose 29 paperwork burden hours, with associated costs of \$653. Applicants seeking MSHA product approval that employ 500 or fewer workers will incur 16 paperwork burden hours and related costs of \$348. Applicants seeking MSHA product approval that employ more than 500 workers will incur 13 paperwork burden hours and related costs of \$305.

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

Details	<500 Workers		>500 Workers		Annual Totals	
	Burden Hours	Burden Costs	Burden Hours	Burden Costs	Burden Hours	Burden Costs
6.10(a)(1)-(a)(3) ¹	12.5	\$241	11.3	\$217	23.8	\$458
6.10(a)(2) ²	1.5	\$29	0.5	\$10	2.0	\$39
6.10 (f) ³	1.5	\$78	1.5	\$78	3.0	\$157
Total	16	\$348	13	\$305	29	\$653

¹ See Table VII-2.

² See Table VII-3.

³ See Table VII-4.

PAPERWORK PROVISIONS

Section 6.10(a)(1) through (a)(3)

Under §6.10, applicants seeking MSHA product approval must provide the information stated in paragraphs (a)(1) through (a)(4) for MSHA to accept testing and evaluation performed by an independent laboratory. Currently, applications require only information requested in paragraph (a)(4). Information requested in paragraphs (a)(1)

through (a)(3) is required by the final rule because MSHA will no longer be performing all the tests and evaluations associated with the approval application.

Paragraph (a)(1) requires “written evidence of the laboratory’s independence and current recognition by a laboratory accrediting organization.” Paragraph (a)(2) requires “a complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements.” Paragraph (a)(3) requires “identification of components or features of the product that are critical to the safety of the product.” The information in paragraphs (a)(1) through (a)(3) will be completed by the independent laboratory and supplied to the applicant, who will then send it to MSHA.

Some test and evaluation requirements under non-MSHA product safety standards used by independent laboratories are the same as MSHA’s current approval requirements. Applicants routinely have such tests and evaluations performed by an independent laboratory when seeking a non-MSHA approval or listing. Generally, under the circumstances of the final rule, before requesting an MSHA product approval either based on MSHA’s approval requirements or non-MSHA product safety standards that are equivalent to MSHA’s approval requirements, applicants will already have had an independent laboratory perform some portion of the tests and evaluations that are also needed to obtain an MSHA product approval. It is with regard to these test and evaluation results that MSHA requires the data requested in paragraphs (a)(1) through (a)(3). The costs of the tests and evaluations performed by an independent laboratory will have already occurred before the applicant files an MSHA product approval application. Therefore, the only costs to applicants associated with §6.10(a)(1) through (a)(3) will be those related to passing on the information required in these provisions to MSHA that the applicant has received from the independent laboratory.

Table IV-3 shows a total of 16 applications annually (10 applications for those employing 500 or fewer workers and six applications for those employing more than 500 workers) for which applicants will opt to file under part 6 requesting an MSHA approval based on independent laboratory testing to conform to MSHA approval requirements. Tables IV-4 through IV-9 show a total of 79 applications (40 applications for those employing 500 or fewer workers and 39 applications for those employing more than 500 workers) for which applicants will be expected to file annually under part 6 seeking an MSHA approval based on non-MSHA approval requirements that are equivalent to MSHA’s approval requirements. Therefore, there will be an annual total of 95 anticipated applications, 50 (40 + 10) applications associated with applicants employing 500 or fewer workers and 45 (39 + 6) applications associated with applicants employing more than 500 workers, for which the information requested in paragraphs (a)(1) through (a)(3) must be sent by the applicant to MSHA.

MSHA estimates that a clerical worker, earning \$19.27 per hour, will take 15 minutes (0.25 hours) per application to prepare and send the data requested in paragraphs (a)(1) through (a)(3).

Table VII-2 shows applicants annual burden hours and related costs to provide information requested in §6.10 paragraphs (a)(1) through (a)(3).

**Table VII-2: Section 6.10(a)(1) Through (a)(3)
Annual Burden Hours and Costs to Provide Data to MSHA**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	No. of Annual Approval Applications	Time to Prepare & Send Data (hrs.)	Annual Burden Hours ^a	Clerical Wage Rate per hr.	Annual Burden Costs ^b
≤500	50	0.25	12.5	\$19.27	\$241
>500	45	0.25	11.3	\$19.27	\$217
Total	95		23.8		\$458

^a Col. (d) = Col. (b) x Col. (c).

^b Col. (f) = Col. (d) x Col. (e).

Section 6.10(a)(2) Compliance Costs Associated with §6.10(d)

If an independent laboratory conducts any additional or repeat testing, then the applicant must send the test results to MSHA. This is true even if MSHA observes the testing performed by the independent laboratory. However, if MSHA performs additional or repeat testing itself, then it is not necessary for the applicant to send in the test results to MSHA. Sending additional or repeat testing results to MSHA is covered under §6.10(a)(2). Information concerning §6.10(a)(1) and (a)(3) that was sent to MSHA with the original approval application do not have to be sent again as a result of any additional or repeat testing.

For applicants employing 500 or fewer workers, Table IV-11(A) shows 16 applications that will involve additional or repeat testing. Of these 16 applications, MSHA estimates that six applications will involve testing performed by an independent laboratory.

For applicants employing more than 500 workers, Table IV-11(B) shows 11 applications that will involve additional or repeat testing. Of these 11 applications, MSHA estimates that two applications will involve testing performed by an independent laboratory.

MSHA estimates that a clerical worker, earning \$19.27 per hour, will take 15 minutes (0.25 hours) per application to prepare and send the test results requested in §6.10(a)(2).

Table VII-3 shows applicants' annual burden hours and related costs to provide the information requested in §6.10(a)(2) for the additional or repeat testing required under §6.10(d).

**Table VII-3: Section 6.10(a)(2)
Annual Burden Hours and Costs to Provide Data to MSHA
for Additional or Repeat Testing Under Section 6.10(d)**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	No. of Annual Approval Applications	Time to Prepare & Send Data (hrs.)	Annual Burden Hours ^a	Clerical Wage Rate per hr.	Annual Burden Costs ^b
<500	6	0.25	1.5	\$19.27	\$29
>500	2	0.25	0.5	\$19.27	\$10
Total	8		2		\$39

^a Col. (d) = Col. (b) x Col. (c).

^b Col. (f) = Col. (d) x Col. (e).

Section 6.10(f)

Paragraph (f) of §6.10 states that, once the product is approved, the approval holder must notify MSHA of all product defects of which the approval holder is aware. MSHA expects that such defects will occur and be reported very infrequently. MSHA estimates that annually one applicant employing 500 or fewer workers and one applicant employing more than 500 workers will notify MSHA of a defective approved product. A supervisor earning \$52.22 per hour is estimated to take 1.5 hours to notify MSHA in writing about a product defect.

Table VII-4 shows the annual costs for applicants to notify MSHA of product defects required by §6.10(f).

**Table VII-4: Section 6.10 (f)
Annual Burden Hours and Costs
Related to Notification of Defective Products**

(a)	(b)	(c)	(d)	(e)	(f)
Applicant Empl. Size	Annual No. of Times That Applicant Will Notify MSHA of Product Defects	Time to Prepare Notification Letter (hrs.)	Annual Burden Hours ^a	Superv. Wage Rate per hr.	Annual Burden Costs ^b
≥500	1	1.5	1.5	\$52.22	\$78
>500	1	1.5	1.5	\$52.22	\$78
Total	2		3.0		\$157

^a Col. (d) = Col. (b) x Col. (c).

^b Col. (f) = Col. (d) x Col. (e).

References

- The Birmingham News. “Mine Rescue Try Fails; 13 Dead.” September 25, 2001 edition.
- Coal Age. News. January 1, 1999.
- U.S. Department of Labor, Bureau of Labor Statistics. Consumer Price Index October 2001.
- U.S. Department of Labor. Mine Safety and Health Administration. Comment No. (98-1-22), P. 2, Comment No. (98-1-24) P. 2, Comment No. (98-1-25) P. 8, Comment No. (98-3-4) P. 2.
- U.S. Department of Labor. Mine Safety and Health Administration. April 30, 1996 Hearing Transcripts. PP. 103 and 112.
- U.S. Department of Labor. Mine Safety and Health Administration. National Mine Health and Safety Academy. Mine Gases. Safety Manual No. 2. 1986. P. 13.
- U.S. Department of Labor. Mine Safety and Health Administration. Program Evaluation and Information Resources. Office of Program Policy Evaluation. 1995-2001 Fatalities.
- Western Mine Engineering Inc. U.S. Coal Mine Salaries, Wages, and Benefits and U.S. Metal and Industrial Mineral Mine Salaries, Wages, and Benefits. 2001 Survey Results. Spokane, Washington. 2001.