PRELIMINARY REGULATORY ECONOMIC ANALYSIS

PROPOSED RULE ON 30 CFR PART 48

TRAINING STANDARDS FOR SHAFT AND SLOPE CONSTRUCTION WORKERS
AT MINES

RIN 1219-AB35

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

January 2004

Tables of Contents

I. EXECUTIVE SUMMARY

INTRODUCTION

We, the Mine Safety and Health Administration (MSHA), are revising some of the provisions in our existing 30 CFR part 48 Training and Retraining of Miners. This proposed rule would remove the part 48 exclusion for shaft and slope construction workers. Shaft and slope construction workers under this proposed rule would be treated like extraction and production miners and subject to the part 48 training requirements accordingly. Section 101 of the Federal Mine Safety and Health Act of 1977 provides the authority for this rulemaking.

Based on our analysis of compliance costs, we have determined that this standard would not have an annual effect of $100 million or more on the economy and, therefore, it is not an economically significant regulatory action pursuant to § 3(f) (1) of Executive Order 12866.

BENEFITS SUMMARY

As discussed in Chapter III of this Preliminary Regulatory Economic Analysis (PREA), the removal of the part 48 exclusion for shaft and slope construction workers would prevent approximately 0.2 fatalities and 11 days-lost injuries annually.

COMPLIANCE COST SUMMARY

The proposed rule would result in yearly costs of approximately $161,000 for all coal contractor firms and $34,000 for all M/NM contractor firms. In addition, coal contractor workers would incur yearly costs of about $20,000, and M/NM contractor workers would incur yearly costs of about $4,000 for training prior to employment. This additional cost of $24,000 would average about $35 per contractor worker.

REGULATORY FLEXIBILITY CERTIFICATION AND ANALYSIS

In accordance with section 605 of the Regulatory Flexibility Act, we certify that the proposed rule would not have a significant economic impact on a substantial number of small entities. Under the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act, we must include in the proposed rule a factual basis for this certification. The Agency must also publish the regulatory flexibility certification statement in the Federal Register, along with the factual basis, followed by an opportunity for the public to comment. The analysis that provides the factual basis for this certification is discussed in Chapter V of this document and would be included in the preamble to the proposed rule for publication in the Federal Register. We have consulted with the Small Business Administration's (SBA's) Office of Advocacy and believe that the analysis provides a reasonable basis for this certification.

II. INDUSTRY PROFILE

INTRODUCTION

This industry profile provides information concerning the structure and economic characteristics of the mining industry, which includes data about the number of mines and miners by type and size of mine.[1]

The value of the U.S. mining industry's 2002 coal and metal and nonmetal (M/NM) production was estimated to be about $56.7 billion, or 0.5 percent of 2002 Gross Domestic Product (GDP). Coal mining contributed about $18.7 billion to the GDP,[2] while the M/NM mining sector contributed about $38.0 billion.[3]

STRUCTURE OF THE MINING INDUSTRY

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

MSHA categorizes mines by size based on employment. For purposes of this proposed rule, MSHA has categorized mines into three groups. These are mines that employ: fewer than 20 workers; 20 to 500 workers; and more than 500 workers. For the past 20 years, for rulemaking purposes, the Agency has consistently defined a small mine to be one employing fewer than 20 employees and a large mine to be one employing 20 or more employees. However, to comply with the requirements of the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act (RFA), MSHA must use the Small Business Administration's (SBA's) criteria for a small entity when determining a rule's economic impact. For the mining industry, SBA defines a small mine as one employing 500 or fewer employees and a

---

[1] A detailed economic picture of the coal and metal and nonmetal (M/NM) mining industry is difficult to develop because most mines are either privately held corporations, sole proprietorships, or subsidiaries of publicly owned companies. Privately held corporations and sole proprietorships are not required to make their financial data available to the public. Further, parent companies are not required to separate financial data for subsidiaries in their reports to the Securities and Exchange Commission. As a result, financial data are available for only a few coal and M/NM companies. Such data are not representative of the entire mining industry.

[2] Coal production data are from U.S. Department of Labor Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2002 data. The average U.S. underground coal price (for 2001) is from the Department of Energy, Energy Information Administration, *Annual Coal Report 2001*, March 2003, Table 29, page 52.

[3] U.S. Department of the Interior, U.S. Geological Survey, *Mineral Commodities Summaries 2003*, January 2003, p. 7.

large mine as one that employees more than 500 workers. Thus, combining the first two MSHA mine categories noted above will meet the SBA's definition of a small mine.

Table II-1 presents the number of small and large coal mines and their employment, excluding contractors, for the coal mining sector by mine type. The table presents the three mine size categories based on employment: (1) fewer than 20 employees (MSHA's traditional small mine definition); (2) 20 to 500 employees; and (3) more than 500 employees. In addition, it shows that, of all coal mines, about 34 percent are underground mines employing about 52 percent of miners, while 66 percent are surface mines employing 48 percent of miners.

Table II-1: Distribution of Coal Operations and Employment (Excluding Contractors)
by Mine Type and Size, 2002

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

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

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

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

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

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

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

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

Table II-3 presents the total number of small and large mines and their employment, excluding contractors, for the M/NM mining segment. The table presents the three mine size categories based on employment: (1) fewer than 20 employees (MSHA's traditional small mine definition); (2) 20 to 500 employees; and (3) more than 500 employees. The M/NM mining segment consists of metal mines (copper, iron ore, gold, silver, etc.) and nonmetal mines (stone including granite, limestone, dolomite, sandstone, slate, and marble; sand and gravel; and others such as clays, potash, soda ash, salt, talc, and pyrophyllite.) As Table II-3 indicates, about 99 percent of all M/NM mines are surface mines, and these mines employ some 91 percent of all M/NM miners, excluding office workers.

Table II-3: Distribution of M/NM Mine Operations and Employment (Excluding Contractors) by Size of Operation, 2002

| Contr. Type | Size of M/NM Mine * | | | | | | | | | All M/NM Mines | | |
| | < 20 Employees | | | 20 to 500 Employees | | | > 500 Employees | | | | | |
	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.
Underg.	110	853	146	118	9,288	888	4	3,006	178	232	13,147	1,212
Surface	10,580	51,774	9,758	1,609	74,855	12,983	14	10,473	1,499	12,203	137,102	24,240
Total	10,690	52,627	9,904	1,727	84,143	13,871	18	13,479	1,677	12,435	150,249	25,452

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

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

Table II-4 presents corresponding data on the number of independent M/NM contractors and their employment. Table II-4 shows that, of all M/NM contractor firms, about 10 percent operate in underground mines and employ about 7 percent of contractor employees (excluding office employment), while 90 percent operate at surface mines and employ 93 percent of contractor employees (excluding office employment). The proposed rule would affect those contractor firms that have shaft and slope construction workers in underground mines or at surface areas of underground mines.

Table II-4: Distribution of M/NM Mine Contractor Employment by Size of Operation, 2002

| Contr. Type | Size of M/NM Contractor * | | | | | | | | | All M/NM Contractors | | |
| | < 20 Employees | | | 20 to 500 Employees | | | > 500 Employees | | | | | |
	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.	Firms	Emp.	Office Emp.
Underg.	359	997	53	4	1,768	69	0	0	0	363	2,765	122
Surface	3,233	15,189	701	398	19,914	910	0	0	0	3,631	35,103	1,611
Total	3,592	16,186	754	402	21,682	979	0	0	0	3,994	37,868	1,733

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

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

STRUCTURE OF THE COAL MINING INDUSTRY

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

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

ECONOMIC CHARACTERISTICS OF THE COAL MINING INDUSTRY

MSHA classifies the U.S. coal mining sector into two major commodity groups: bituminous and anthracite. The former is further divided into sub-bituminous and lignite. Bituminous operations represent about 92% of coal mining operations, employ over 98% of all coal miners, and account for over 99% of total coal production. The remaining 8% of coal mining operations are mostly lignite.[4]

The U.S. coal sector produced approximately 1.093 billion short tons of coal (0.739 billion tons at surface mines and 0.354 billion tons at underground mines) in 2001.

---

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

The average price of coal at surface and underground mines was $13.18 and $25.37 per ton, respectively.[5] Surface coal mines accounted for $9.7 billion of revenues and underground coal mines accounted for $9.0 billion, for a total of $18.7 billion. Based on MSHA's definition, small mines produced 28.2 million tons, valuing at about $0.5 billion. Based on SBA's definition, small mines produced 906 million tons, valued at $15.8 billion, or about 83% of coal production and about 84% of coal revenues.[6]

Mines east of the Mississippi River accounted for about 47 percent of coal production in 2001. For the period 1949 through 2001, coal production east of the Mississippi River ranged, from a low of 395 million tons in 1954 to a high of 630 million tons in 1990; 2001 production was estimated at 526 million tons. During this same period, however, coal production west of the Mississippi increased each year from a low of 20 million tons in 1959 to an estimated record high of 596 million tons in 2001.[7] Growth in western coal mines is due, in part, to environmental concerns that increase demand for low-sulfur coal, which is in abundance in the West. In addition, surface mining, with its higher average productivity, is much more prevalent in the West.

Average domestic coal prices (nominal and real prices) for the period 1950-2001 are presented in Table II-3. The nominal price is the price not adjusted for inflation. The real price is the price of coal after it has been adjusted for inflation by using constant dollars from a particular year (in Table II-3, the real price is in terms of 1996 dollars). During this period the inflation-adjusted, or real, price of coal has generally declined. The one exception was a spike in coal prices during the OPEC petroleum price increases in the 1970s. The real price of coal in 2001 was approximately 47 percent lower than in 1950.[8] The real price of coal per Btu was approximately 39 percent lower in 2001 than in 1950, which has caused coal to become the least expensive of the major fossil fuels in terms of dollars per Btu.[9]

---

[5] Coal prices are the average open market sales prices for 2001. U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2001*, March 2003, Table 29.

[6] Coal production obtained from U.S. Department of Labor, Mine Safety and Health Administration, Directorate of Program Evaluation and Information Resources, 2002 data. Average U.S. coal price estimates obtained from the Department of Energy, Energy Information Administration, *Annual Coal Report 2001*, March 2003, Table 29, p. 52. Underground and surface coal revenues are separately computed, then summed to obtain total coal revenue.

[7] Ibid.

[8] US Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, November 2002, Table 7.8, p. 215.

[9] US Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, November 2002, Table 3.1, p. 71. Coal energy (per Btu) was more expensive than natural gas energy in 1950, but was less expensive in 2001. Both coal and gas energy were less expensive than crude oil energy in 1950 and 2001.

Table II-3: Coal Prices 1950-2001
(Dollars per Short Ton)

Year	Nominal Price ($ per Short Ton)	Real Price (1996 $ per Short Ton)	Nominal Price ($ per Million BTU)	Real Price (1996 $ per Million Btu)
1950	5.19	29.74	0.21	1.19
1955	4.69	23.71	0.19	0.94
1960	4.83	21.77	0.19	0.87
1965	4.55	19.13	0.18	0.77
1970	6.34	21.82	0.27	0.92
1975	19.35	48.34	0.85	2.11
1980	24.65	43.22	1.10	1.93
1985	25.20	34.20	1.15	1.56
1990	21.76	25.15	1.00	1.15
1991	21.49	23.97	0.99	1.11
1992	21.03	22.90	0.97	1.06
1993	19.85	21.11	0.93	0.99
1994	19.41	20.22	0.91	0.95
1995	18.83	19.19	0.88	0.90
1996	18.50	18.50	0.87	0.87
1997	18.14	17.79	0.85	0.84
1998	17.67	17.12	0.83	0.80
1999	16.63	15.89	0.79	0.75
2000	16.78	15.68	0.80	0.74
2001*	17.38	15.72	0.80	0.73

Source: US Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, November 2002, Table 7.8, p. 215; Table 3.1, p.67.

* Prices per short ton come from US Department of Energy, Energy Information Administration, *Annual Coal Report 2001*, March 2003, Table 29, page 52.

COAL MINING INDUSTRY OUTLOOK

The U.S. coal industry enjoys a fairly constant domestic demand. About 91 percent of U.S. coal demand was accounted for by electric power producers in 2001.[10] Domestic coal demand is projected to increase because of growth in coal use for electricity generation. Coal consumption for electricity generation is projected to increase as the utilization of existing coal-fired generation capacity increases and as new capacity is added. The average utilization rate is projected to increase from 69 percent in 2001 to 83 percent in 2025. The amount of U.S coal exported in 2001 was 49 million tons (about 5 percent of production). These exports are projected to decline in the future, to about 26 million tons by 2025.[11]

---

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

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

THE STRUCTURE OF THE METAL/NONMETAL MINING INDUSTRY

The M/NM mining sector consists of about 80 different commodities including industrial minerals. There were 12,435 M/NM mines in the U.S. in 2002, of which 10,690 (86%) were small mines and 1,745 (14%) were large mines, using MSHA's traditional definition of small and large mines. Based on SBA's definition, however, only 18 M/NM mines (0.15%) were large mines.[12]

The data in Table II-3 indicate that employment at M/NM mines in 2002 was 175,701, of which 62,531 workers (36%) were employed by small mines and 113,170 workers (64%) were employed by large mines (excluding contractor workers), using MSHA's definition. Based on SBA's definition, however, 160,545 workers (91%) were employed by small mines and 15,156 workers (9%) were employed by large mines (excluding contractor workers). Using MSHA's definition, the average employment is 6 workers at a small M/NM mine and 65 workers at a large M/NM mine. Using SBA's definition, there is an average of 13 workers in each small M/NM mine and 842 workers in each large M/NM mine.[13]

Metal Mining

There are about 24 metal commodities mined in the U.S. Underground metal mines use a few basic mining methods, such as room and pillar and block caving, but all these mines, small and large, rely heavily on diesel-powered production and support equipment.

Surface metal mines normally include drilling, blasting, loading, and hauling; such processes are typical in all surface mines, irrespective of commodity types. Surface metal mines in the U.S. rank among some of the largest mines in the world.

Metal mines constitute 2 percent of all M/NM mines and employ 17 percent of all M/NM miners. Under MSHA's traditional definition of a small mine, 51 percent of metal mines are small, and these mines employ 3 percent of all miners working in metal mines. Using SBA's definition, 95 percent of metal mines are small, and they employ 57 percent of all miners working in metal mines.[14]

Stone Mining

In the stone mining subsector, there are eight different stone commodities, of which seven are further classified as either dimension stone or crushed and broken stone. Stone mining in the U.S. is predominantly done by quarrying, with only a few slight variations. Crushed stone mines typically drill and blast, while dimension stone mines generally use channel burners, drills, or wire saws. Diesel powered-haulage is used to transfer the broken rock from the quarry to the mill where crushing and sizing are done.

---

[12] U.S. Department of Labor Mine Safety and Health Administration, Directorate of Program Evaluation and Information Resources, calendar year 2002 data.

[13] Ibid.

[14] Ibid.

Stone mines constitute 35 percent of all M/NM mines, and they employ 45 percent of all M/NM miners. Using MSHA's definition of a small mine, 75 percent of stone mines are small, and these mines employ 31 percent of all miners working in stone mines. Using SBA's definition, 99.98 percent of stone mines are small, and they employ 99 percent of all miners working in stone mines.[15]

Sand & Gravel Mining

Sand and gravel, for construction, is generally extracted from surface deposits using dredges or draglines. Further preparation involves washing and screening. As in other surface mining operations, sand and gravel uses diesel-driven machines, such as front-end loaders, trucks, and bulldozers, for haulage. The preparation of industrial sand and silica flour involves the use of crushers, ball mills, vibrating screens, and classifiers.

The sand and gravel subsector represents the single largest commodity group in the U.S. mining industry based on the number of mining operations. Sand and gravel mines comprise 57 percent of all M/NM mines, and they employ 25 percent of all M/NM miners. Using MSHA's definition of a small mine, 95 percent of sand and gravel mines are small, and these mines employ 75 percent of all miners working in sand and gravel mines. Using SBA's definition, 100 percent of sand and gravel mines are small, and they employ approximately 35,714 miners.[16]

Other Nonmetal Mining

For enforcement and statistical purposes, MSHA separates stone and sand and gravel mining from other nonmetal mining. There are about 35 other nonmetal commodities, not including stone, and sand and gravel. Nonmetal mining uses a wide variety of underground mining methods such as continuous mining (similar to coal mining), in-situ retorting, block caving, and room and pillar. The mining method is dependent on the geologic characteristics of the ore and host rock. Some nonmetal operations use kilns and dryers in ore processing. Ore crushing and milling are processes common to both nonmetal and metal mining.

As with underground mining, there is a wide range of mining methods utilized in extracting minerals by surface mining. In addition to drilling and blasting, other mining methods, such as evaporation and dredging, are also utilized, depending on the ore formation.

"Other" nonmetal mines comprise 6 percent of all M/NM mines, and they employ 13 percent of all M/NM miners. Using MSHA's definition of a small mine, 70 percent of other nonmetal mines are small, and they employ 14 percent of all miners working in these nonmetal mines. Using SBA's definition, 99.6 percent of other nonmetal mines are small, and they employ 90 percent of all miners working in these nonmetal mines.[17]

---

[15] Ibid.

[16] Ibid.

[17] Ibid.

ECONOMIC CHARACTERISTICS OF THE METAL/NONMETAL MINING INDUSTRY

The value of all M/NM mining output in 2002 was estimated at $37.9 billion. Metal mines, which include copper, gold, iron, lead, silver, tin, and zinc mines, contributed $7.9 billion.[18] Nonmetal production was valued at $30 billion: $9.3 billion from stone mining, $6.4 billion from sand and gravel, and $14.3 billion from other nonmetals such as potash, clay, and salt.[19]

The end uses of M/NM mining output are diverse. For example, iron and aluminum are used to produce vehicles and other heavy duty equipment, as well as consumer goods such as household equipment and soft drink cans. Other metals, such as uranium and titanium, have more limited uses. Nonmetals, like cement, are used in construction while salt is used as a food additive and for road de-icing in the winter. Soda ash, phosphate rock, and potash also have a wide variety of commercial uses. Stone and sand and gravel are used in numerous industries and extensively in the construction industry.

---

[18] U.S. Department of Interior, U.S. Geological Survey, Mineral Commodity Summaries 2003, January 31, 2003, p. 7.

[19] Ibid., pp.142, 144, 158, 160.

III. BENEFITS

INTRODUCTION

For purposes of the benefits chapter, we are combining shaft and slope construction contractor workers working at either underground coal or M/NM mines together as one group. The reason is that these contractor workers could be employed at either an underground coal or M/NM mine upon completion of new miner training or experienced miner training. In the period from 1982 through August 2003, there were 15 fatalities of shaft and slope construction contract workers employed at underground mines. Most recently, three miners were killed in a shaft and slope construction accident in January 2003. In addition, there were an estimated 1,830 days-lost injuries for shaft and slope workers during the same period.[20]

The hazards that shaft and slope construction workers face are generally no different from hazards faced by all underground or surface miners. Therefore, they should receive the same training. Current training regulations in 30 CFR part 48 exempt shaft and slope construction workers. MSHA has determined that the proposed rule, which would remove the language exempting shaft and slope construction workers from being required to take part 48 training, would provide safety benefits to the existing rule by including these workers. Shaft and slope construction workers, would now receive the same type of training from contractor firms afforded to miners working in underground or surface areas of underground mines.

METHODOLOGY

MSHA reviewed its own accident and injury data from 1982 to August 2003 as the basis for determining the number of work-related fatalities for shaft and slope construction workers. We estimated the number of injuries based on the ratio of fatalities to injuries because MSHA does not, in its computerized injury database, separate out shaft and slope construction workers from all contractor workers. We applied this ratio to the number of fatalities reported during the same period.

MSHA assumes that the past history of mining fatalities and injuries can be used as a basis to forecast the number of mining fatalities and injuries in future years. MSHA believes that lack of training is a major factor in the number of accidents and injuries involving shaft and slope construction workers. Conversely, MSHA expects that training can contribute significantly to a reduction in accidents, injuries, illnesses, and fatalities by fostering safe work practices, increasing job skills, and enhancing hazard awareness and hazard prevention. The decrease in the number of fatalities and injuries which MSHA has estimated is based on these assumptions.

---

[20] This estimate is based on the ratio of fatalities to injuries (for all contractor workers working for underground mines) from 1993 to 2002.

PROJECTED BENEFITS

Safety and health professionals from all sectors of industry recognize that training is a critical element of an effective safety and health program. Training informs miners of safety and health hazards inherent in the workplace and enables them to identify and avoid such hazards. Training further teaches miners health and safety principles and safe operating procedures in performing their work tasks. Training becomes more important with the influx of new and less experienced miners and mine operators; longer work hours to meet demands; and increased demand for contractors who may be less familiar with the dangers on mine property.

As previously mentioned there were 15 shaft and slope construction worker fatalities and an estimated 1,830 days-lost injuries for these miners from 1982 to August 2003. This would be equivalent to 0.69 fatalities and 84.5 days-lost injuries annually for shaft and slope construction workers.

In support of MSHA's 1999 part 46 final rule, we estimated the effect of M/NM miner training using data on injury and fatality rates for mines that conducted training versus those that did not. On average, mines that conducted training had fatality rates that were 60 percent lower and days-lost injury rates that were 26 percent lower, relative to mines that did not conduct training. We noted that the mines with training tended to be larger and safer (independent of training) and assumed that only half of the observed lower injury and fatality rates was due to training itself. Therefore, for part 46, we estimated that miner training would reduce fatality rates by 30 percent and injury rates by 13 percent.

Applying these same rates to shaft and slope construction worker training, we estimate that the proposed rule would prevent approximately 0.2 fatalities and 11 days-lost injuries annually.

IV. COST OF COMPLIANCE

INTRODUCTION

In this chapter, we estimate the costs by section that shaft and slope construction contractors would incur to provide training to shaft and slope construction workers. We anticipate that most shaft and slope construction contractor workers entering the industry will have received 32 hours of underground and 24 hours of surface new miner training. In addition, in most cases, mine operators would be responsible for providing hazard training to the shaft and slope company's employees who are working on their property.

We recognize that shaft and slope construction contractor firms are mine operators and their contractor workers are miners. For purposes of clarity in this document, we will refer to shaft and slope construction operators as contractor firms and shaft and slope construction miners as shaft and slope construction workers. Since these workers are miners, in some of the discussion they will be referred to as such. The proposed rule would treat shaft and slope construction workers (for training purposes) like other miners already covered under part 48. Shaft and slope construction workers include those who work in underground coal and M/NM mines and at the surface areas of underground coal and M/NM mines. For the purposes of the cost analysis, we used our traditional definition of a small contractor firm as one employing fewer than 20 workers, and a large contractor firm as one employing 20 or more workers. Table IV-1 summarizes the estimated yearly compliance costs of the proposed rule by mine size and by provision.

All cost estimates in this chapter are presented in 2003 dollars. The total costs reported in Table IV-1, and in all other tables in this chapter, are, to the best of our knowledge, the result 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. The total yearly costs of the proposed rule are about $161,000 for all coal contractor firms and $34,000 for all M/NM contractor firms. In addition, coal contractor workers would incur yearly costs of about $20,000, and M/NM contractor workers would incur yearly costs of about $4,000 (see Table IV-9) for training prior to employment. This cost would average about $35 per contractor worker.

Table IV-1: Summary of Yearly Costs of the Proposed Rule for Contractor Firms*

Contractor Firm Size	Coal						Total Costs**
	§ 48.3 & § 48.23	§ 48.6 & § 48.26	§ 48.7 & § 48.27	§ 48.8 & § 48.28	§ 48.9 & § 48.29	§ 48.11 & § 48.31	
Small (< 20)	$0	$0	$0	$0	$0	$0	$0
Large (20-500)	$867	$5,472	$54,720	$96,330	$1,017	$2,565	$160,971
Large (> 500)	$0	$0	$0	$0	$0	$0	$0
Contractor Firm Size	M/NM						Total Costs
	§ 48.3 & § 48.23	§ 48.6 & § 48.26	§ 48.7 & § 48.27	§ 48.8 & § 48.28	§ 48.9 & § 48.29	§ 48.11 & § 48.31	
Small (< 20)	$0	$0	$0	$0	$0	$0	$0
Large (20-500)	$195	$1,152	$11,520	$20,280	$214	$540	$33,901
Large (> 500)	$0	$0	$0	$0	$0	$0	$0

* Summary of costs comes from Table IV- 6, Table IV- 10,Table IV- 11, Table IV- 12, Table IV- 13, and Table IV- 14.

** Total costs = annualized costs + annual costs.

METHODOLOGY

For this proposed rule, we estimated the following, as appropriate: (1) annual costs; and (2) non-annual recurring costs. Annual costs are costs that normally recur annually. One example of an annual cost is annual refresher training. Recurring costs are those that are incurred once every X number of years. Capital expenditures, such as the cost of purchasing compliance equipment that needs to be replaced every X number of years, are an example of recurring costs. For the purposes of this PREA, recurring costs have been annualized using an annual discount rate of 7%, as recommended by the U.S. Office of Management and Budget (OMB), using the formula:

$$a \ = \ (i* (1 + i)^n)/((1 + i)^n - 1), \tag{1}$$

where

a = the annualization factor,

i = the annual discount rate, and

n = the economic life of the non-annual recurring investment.

Converting non-annual recurring costs to annualized costs allows them to be added to annual costs in order to compute the total yearly costs of a rule.

We used an hourly compensation rate of $18.00 for a shaft and slope construction contractor worker; $30.00 for a health and safety instructor; and $14.43 for a clerical worker working at either a coal or M/NM mine.[21] These figures include benefits such as social security, unemployment insurance, and workers' compensation, but they do not reflect shift differentials or overtime pay. For convenience, we will refer to miner "compensation" in this PREA as "wages," where that term is understood to include benefits.

SCOPE

This proposed rule extends part 48 training to coal and M/NM shaft and slope construction workers who work in underground mines or at surface areas of underground mines. Based on the 2nd quarter of 2003 data, the proposed rule would cover about 690 shaft and slope construction workers. Of this total, about 570 (or 83%) are employed by coal contractor firms, while the remaining 120 (or 17%) are employed by M/NM contractor firms. All of these contractor firms are large, employing 20 to 500 workers. Table IV-2 presents our estimate of the average total numbers of underground coal and M/NM contractor firms, and their respective numbers of shaft and slope construction workers.

The proposed rule would cover more shaft and slope construction workers than the numbers reported here, because the proposed rule would cover both currently

---

[21] Based on MSHA's experience and knowledge about shaft and slope construction workers.

employed shaft and slope construction workers and all the newly hired shaft and slope construction workers. The turnover rate for both coal and M/NM contractor workers is estimated to be approximately 30% of the average numbers of shaft and slope construction workers in 2003. Therefore, the annual number of all newly hired shaft and slope construction workers is estimated to be 171 for coal and 36 for M/NM. Of these newly hired miners, one-third (57 in coal and 12 in M/NM) would be new shaft and slope construction workers, whereas the remaining two-thirds (114 in coal and 24 in M/NM) would be defined as experienced miners under part 48.

Table IV-2: The Average Number of Contractor Firms and Shaft & Slope Construction Workers in 2003*

Contractor Firm Size	# of Coal Contractor Firms	# of Coal Shaft & Slope Construction Workers	# of M/NM Contractor Firms	# of M/NM Shaft & Slope Construction Workers	Total # of Contractor Firms	Total # of Contractor Workers
Small (< 20)	0	0	0	0	0	0
Large (20-500)	19	570	4	120	23	690
Large (> 500)	0	0	0	0	0	0

* Numbers of coal & M/NM contractor firms and coal & M/NM shaft & slope construction workers are based on data collected from Office of Program Evaluation and Information Resources (PEIR) on 2nd quarter of 2003.

SECTION-BY-SECTION DISCUSSION

§ 48.3 and § 48.23 Training plans; time of submission; where filed; information required; time for approval; method of disapproval; commencement of training; approval of instructors.

This section would require each contractor firm employing shaft and slope construction workers to have an MSHA approved training plan. The plan must contain the training requirements for underground miners. In most cases, the plan would also contain a surface component for miners who work exclusively at surface areas of slope and shaft operations.

It would take a contractor, on average, seven hours to develop such a training plan without the aid of the Internet. MSHA has an online interactive web-based program which the contractor can use to develop and electronically submit a training plan to MSHA for approval. It would take, on average, three hours to develop a training plan using this service. We estimate that 80% of contractor firms would elect to develop a training plan without the use of the Internet and the remaining 20% would use the interactive web-based program. An hourly wage rate for the contractor is about $30. In addition to the time for developing a training plan, a contractor would require one hour to submit an application to the District Manager to become an approved instructor.

Additionally, representatives from MSHA's Educational Field Services (EFS) are available to assist in developing these training plans. We also have training material and audiovisual products which can be easily ordered at our Mine Health and Safety Academy. These products can be found through the MSHA home page. Once the plan is approved, the contractor firm must provide a copy of the training plan to the miners' representative. In the event where there is no representative, the contractor firm must post the plan on the bulletin board. Table IV-3 provides costs related to training plans for this proposed rule.

Table IV-3: Annualized Costs for Existing Contractor Firms to Develop Training Plans in Accordance with § 48.3 and § 48.23

Contractor Firm Size	Coal				
	# of Contractor Firms[a]	Cost to Develop Training Plan[b]	Cost to Submit Application to Become Approved Instructor[c]	Cost to Distribute/Post Training Plan on Bulletin Board[d]	Total Annualized Costs[e]
Small (< 20)	0	$186	$30	$2.70	$0
Large (20-500)	19	$186	$30	$2.70	$291
Large (> 500)	0	$186	$30	$2.70	$0

Contractor Firm Size	M/NM				
	# of Contractor Firms[a]	Cost to Develop Training Plan[b]	Cost to Submit Application to Become Approved Trainer[c]	Cost to Distribute/Post Training Plan on Bulletin Board[d]	Total Annualized Costs[e]
Small (< 20)	0	$186	$30	$2.70	$0
Large (20-500)	4	$186	$30	$2.70	$61
Large (> 500)	0	$186	$30	$2.70	$0

[a] # of contractor firms comes from Table IV-2.

[b] Cost to develop training plans = $[(T_{p1} \times W_s \times 80\%) + (T_{p2} \times W_s \times 20\%)]$, where T_{p1} is equal to the number of hours for a contractor to develop a training plan without the internet (T_{p1} = 7 hours); W_s is the hourly wage rate for a contractor (W_s = $30); 80% is the percentage of contractor firms who would elect to develop a training plan without the internet; T_{p2} is equal to the number of hours for a contractor to develop a training plan with the internet (T_{p2} = 3 hours) and 20% is the percentage of contractor firms who would elect to develop a training plan with the internet.

[c] Cost to submit application to become approved instructor = $(T_a \times W_s)$, where T_a is number of hours for a contractor to submit an application to District Manager to become approved instructor (T_a = 1 hour); and W_s is the hourly wage rate for a contractor (W_s = $30).

[d] Cost to distribute/post training plan on bulletin board = $[(N \times \$0.15) + (T_c \times W_c)]$, where N is the average number of pages in training plans (N = 10); $0.15 is the photocopying cost per page; T_c is the number of hours it requires for a clerical worker to photocopy training plan and either distribute the plan to miners' representative or post it on bulletin board (T_c = 0.0833 hours or 5 minutes); and W_c is the hourly wage rate for a clerical worker (W_c = $14.43).

[e] Total annualized costs = [# of contractor firms x (cost to develop training plan + cost to submit application to become approved instructor + cost to distribute/post training plan on bulletin board) x a], where a is the annualization factor (a = 0.07).

MSHA recognizes that there could be new contractor firms entering the industry. Some of these new contractor firms who have done other types of work on mine property would already have an approved training plan. Therefore, there would be no additional cost related to development of a new or separate training plan for shaft and slope construction workers. For those new contractor firms coming into the industry that do not already have a part 48 training plan, the cost related to developing a training plan would the same as indicated above. MSHA estimates that there would be approximately 0.20 such coal contractor firms and 0.10 M/NM contractor firms coming into the industry

every year. Table IV-4 presents the costs related to new contractor firms coming into the industry.

Table IV-4: Yearly Costs for New Contractor Firms to Develop Training Plan in Accordance with § 48.3 and §48.23

| Contractor Firm Size | Coal | | | | |
	# of New Contractor Firms	Cost to Develop Training Plan[a]	Cost to Submit Application to Become Approved Instructor[b]	Cost to Distribute/Post Training Plan on Bulletin Board[c]	Total Annual Costs[d]
Small (< 20)	0	$186	$30	$2.70	$0
Large (20-500)	0.20	$186	$30	$2.70	$44
Large (> 500)	0	$186	$30	$2.70	$0

| Contractor Firm Size | M/NM | | | | |
	# of New Contractor Firms	Cost to Develop Training Plan[a]	Cost to Submit Application to Become Approved Trainer[b]	Cost to Distribute/Post Training Plan on Bulletin Board[c]	Total Annual Costs[d]
Small (< 20)	0	$186	$30	$2.70	$0
Large (20-500)	0.10	$186	$30	$2.70	$22
Large (> 500)	0	$186	$30	$2.70	$0

[a] Cost to develop training plans = $[(T_{p1} \times W_s \times 80\%) + (T_{p2} \times W_s \times 20\%)]$, where T_{p1} is equal to the number of hours for a contractor to develop a training plan without the internet ($T_{p1} = 7$ hours); W_s is the hourly wage rate for a contractor ($W_s = \$30$); 80% is the percentage of contractor firms who would elect to develop a training plan without the internet; T_{p2} is equal to the number of hours for a contractor to develop a training plan with the internet ($T_{p2} = 3$ hours) and 20% is the percentage of contractor firms who would elect to develop a training plan with the internet.

[b] Cost to submit application to become approved instructor = $(T_a \times W_s)$, where T_a is number of hours for a contractor to submit an application to District Manager to become approved instructor ($T_a = 1$ hour); and W_s is the hourly wage rate for a contractor ($W_s = \$30$).

[c] Cost to distribute/post training plan on bulletin board = $[(N \times \$0.15) + (T_c \times W_c)]$, where N is the average number of pages in training plans (N = 10); $0.15 is the photocopying cost per page; T_c is the number of hours it requires for a clerical worker to photocopy training plan and either distribute the plan to miners' representative or post it on bulletin board ($T_c = 0.0833$ hours or 5 minutes); and W_c is the hourly wage rate for a clerical worker ($W_c = \$14.43$).

[e] Total annual costs = [# of contractor firms x (cost to develop training plan + cost to submit application to become approved instructor + cost to distribute/post training plan on bulletin board)].

It would take about one hour for a contractor to update and keep the training plan current starting in year two. This would be done on a yearly basis. This cost is presented in Table IV-5.

Table IV-5: Annual Recurring Costs Pertaining to Training Plan Starting in Year Two in Accordance with § 48.3 and § 48.23

| Contractor Firm Size | Coal | | |
	# of Contractor Firms[a]	Annual Cost to Update Training Plan[b]	Total Annualized Costs[c]
Small (< 20)	0	$30	$0
Large (20-500)	19	$30	$533
Large (> 500)	0	$30	$0

| Contractor Firm Size | M/NM | | |
	# of Contractor Firms[a]	Annual Cost to Update Training Plans[b]	Total Annualized Costs[c]
Small (< 20)	0	$30	$0
Large (20-500)	4	$30	$112
Large (> 500)	0	$30	$0

[a] # of contractor firms comes from table IV-2.

[b] Annual cost to update training plan = $(T_p \times W_s)$, where T_p is the number of hours it would take for a contractor to update traninng plan annually ($T_p = 1$ hour); and W_s is the hourly wage rate for a health and safety instructor ($W_s = \$30$).

[c] Total annualized costs = (# of contractor firms x annual cost to update training plans) / 1.07, where 1.07 is the annualization factor to convert year two to year one.

Table IV-6 summarizes the total yearly costs associated with § 48.3 and § 48.23.

Table IV-6: Summary of Yearly Costs Associated with § 48.3 and § 48.23*

Contractor Firm Size	Costs to Coal Contractor Firms	Costs to M/NM Contractor Firms	Total Costs
Small (< 20)	$0	$0	$0
Large (20-500)	$867	$195	$1,063
Large (> 500)	$0	$0	$0

* Summary of costs comes from Table IV- 3, Table IV-4, and Table IV-5.

§ 48.5 and § 48.25 Training of new miners; minimum courses of instruction; hours of instruction.

Under this section, new underground miners are required to receive 40 hours of new miner training before they are assigned to work duties. MSHA anticipates that most new hires will have already received 32 hours of the training before being hired. Most states, such as West Virginia, have a state grants program which can provide up to 32 hours of new miner training, usually for free or for a nominal charge. We anticipate that all shaft and slope contractor workers will be in states that have a grants program. However, the state grant programs may not always offer timely training for individual new miners. Where the state grants program is unavailable to provide this training, we anticipate the charge for this 32 hours would range anywhere from $150 to $300, or an average of $225. We estimate the opportunity cost for a miner (not currently-employed) to attend training is $9 per hour. MSHA estimates that about 30% of new miners coming into the industry would not be able to take advantage of the state grants program. MSHA estimates that 90% (51.3 miners in coal and 10.8 miners in M/NM) of the total number of new shaft and slope construction workers would work in underground mines. Table IV-7 estimates the annual cost to receive the 32 hours of the initial 40 hours to work in underground mine in accordance with § 48.5.

Table IV-7: Annual New Miner Training Costs Underground That Shaft and Slope Construction Workers Would Incur in Accordance with § 48.5

| Contractor Firm Size | Coal | | |
	# of New Contractor Workers Working Underground[a]	# of New Contractor Workers Having to Pay for Training[b]	Total Annual Costs[c]
Small (< 20)	0	0	$0
Large (20-500)	51.3	15	$18,237
Large (> 500)	0	0	$0

| Contractor Firm Size | M/NM | | |
	# of New Contractor Workers Working Underground[a]	# of New Contractor Workers Having to Pay for Training[b]	Total Annual Costs[c]
Small (< 20)	0	0	$0
Large (20-500)	10.8	3	$3,839
Large (> 500)	0	0	$0

[a] # of new contractor workers working underground is 90% of the total number of new shaft and slope construction workers.

[b] # of new contractor workers having to pay for training = (30% x # of new contractor workers), where 30% is the percentage of new contractor workers who are unable to take advantage of state grants program.

[c] Total annual costs = [($225 x # of new contractor workers having to pay for training) + ($9 x 32 x # of new contractor workers working underground)], where $225 is the average cost for a contractor worker to receive the 32 hours of the initial 40 hours of new miner training to work in underground mine; $9 per hour is the opportunity cost to receive training; and 32 is the number of hours of instruction.

Similarly, the remaining 10% (5.7 miners in coal and 1.2 miners in M/NM) of the total number of new shaft and slope construction workers would work at surface areas of shaft and slope construction sites. They are required to receive 24 hours of new miner training before they are assigned to work duties. Most states, such as West Virginia, have a state grants program which can provide 24 hours of new miner training, usually for free or a nominal charge. We anticipate that all shaft and slope contractor workers will be in states that have a grants program. However, the state grant programs may not always offer timely training for individual new miners. Where the state grants program is unavailable to provide this training, we anticipate the charge for this 24 hours to range anywhere from $120 to $200, or an average of $160. We estimate the opportunity cost for a miner (not currently employed) to attend training is $9 per hour. MSHA estimates that about 30% of new miners coming into the industry would not be able to take advantage of the state grants program. Table IV-8 estimates the annual cost to receive the 24 hours of training in accordance with § 48.25.

Table IV-8: Annual New Miner Training Costs That Surface Shaft and Slope Construction Workers Would Incur in Accordance with § 48.25

Contractor Firm Size	Coal		
	# of New Contractor Workers Working on Surface Areas of Underground Mines[a]	# of New Contractor Workers Having to Pay for Training[b]	Total Annual Costs[c]
Small (< 20)	0	0	$0
Large (20-500)	5.7	2	$1,505
Large (> 500)	0	0	$0
Contractor Firm Size	M/NM		
	# of New Contractor Workers Working on Surface Areas of Underground Mines[a]	# of New Contractor Workers Having to Pay for Training[b]	Total Annual Costs[c]
Small (< 20)	0	0	$0
Large (20-500)	1.2	0.4	$317
Large (> 500)	0	0	$0

[a] # of new contractor workers working on surface areas of underground mines = 10% of the total number of new shaft and slope construction workers.

[b] # of new contractor workers having to pay for training = (30% x # of new contractor workers), where 30% is the percentage of new contractor workers who are unable to take advantage of state grants program.

[c] Total annual costs = [($160 x # of new contractor workers having to pay for training) + ($9 x 24 x # of new contractor workers working underground)], where $160 is the average cost for a contractor worker to receive the 24-hour training; $9 per hour is the opportunity cost to receive training; and 24 is the number of hours of instruction.

Table IV-9 summarizes the total costs to contractor workers associated with § 48.5 and § 48.25.

Table IV-9: Summary of Yearly Costs Associated with § 48.5 and § 48.25*

Contractor Firm Size	Costs to Coal Contractor Workers	Costs to M/NM Contractor Workers	Total Yearly Costs
Small (< 20)	$0	$0	$0
Large (20-500)	$19,742	$4,156	$23,898
Large (> 500)	$0	$0	$0

* Summary of costs comes from Table IV- 7 and Table IV-8.

§ 48.6 and § 48.26 Experienced miner training.

This section would require contractor firms to provide experienced underground miner training. In general, experienced underground miners are miners who have received 40 hours of new miner training and have one year of underground mining experience. MSHA estimates that two-thirds (114 miners in coal and 24 miners in M/NM) of all newly hired shaft and slope construction workers would be considered experienced miners. It would take about one hour to conduct one-on-one experienced miner training by an MSHA approved instructor making $30 an hour. Table IV-10 shows the annual cost to the contractor firms associated with experienced miner training.

Table IV-10: Annual Experienced Miner Training Costs that Contractor Firms Would Have to Incur in Accordance with § 48.6 and § 48.6

Contractor Firm Size	Coal		
	# of New Experienced Contractor Workers[a]	Cost to Train an Experienced Contractor Worker[b]	Total Annual Costs
Small (< 20)	0	$48	$0
Large (20-500)	114	$48	$5,472
Large (> 500)	0	$48	$0
Contractor Firm Size	M/NM		
	# of New Experienced Contractor Workers[a]	Cost to Train an Experienced Contractor Worker[b]	Total Annual Costs
Small (< 20)	0	$48	$0
Large (20-500)	24	$48	$1,152
Large (> 500)	0	$48	$0

[a] # of new experienced contractor workers = 2/3 of newly hired contractor workers.

[b] Cost to train an experienced contractor worker = $[1*(W_s + W_c)]$, where 1 is the number of hours it would take for an MSHA approved instructor to provide experience miner training; W_s is the hourly wage rate for an MSHA approved instructor ($W_s = \$30$); and W_c is the hourly wage rate for a contractor worker ($W_c = \$18$).

<u>§ 48.7 and § 48.27 Training of miners assigned to a task in which they have had no previous experience; minimum courses of instruction.</u>

This section would require contractor firms to provide task training to shaft and slope construction workers whenever they are assigned a new task. Each new task would take, on average, one hour. This average takes into account those tasks which require a demonstration of the task. However, we believe that much of the task training would be on-the-job training, involving normal production activities. Therefore, for purpose of estimating the costs of this section, we assume that only half of the training would entail "downtime" and therefore impose a cost on contractor firms. The training would usually be done one-on-one with a supervisor or miner experienced in the task. On average, each shaft and slope contractor worker is estimated to be assigned four new tasks annually. Table IV-11 estimates the costs related to new task training.

Table IV-11: Annual Task Training Costs that Contractor Firms Would Have to Incur in Accordance with § 48.7 and § 48.27

Contractor Firm Size	Coal			
	# of Contractor Workers[a]	Total # of New Tasks Assigned Annually[b]	Training Cost for Each Task[c]	Total Annual Cost
Small (< 20)	0	0	$24.00	$0
Large (20-500)	570	2,280	$24.00	$54,720
Large (> 500)	0	0	$24.00	$0
Contractor Firm Size	M/NM			
	# of Contractor Workers[a]	Total # of New Tasks Assigned Annually[b]	Training Cost for Each Task[c]	Total Annual Cost
Small (< 20)	0	0	$24.00	$0
Large (20-500)	120	480	$24.00	$11,520
Large (> 500)	0	0	$24.00	$0

[a] # of contractor workers is the average # of shaft and slope construction contractor workers

[b] Total # of new tasks assigned annually = (N x # of contractor workers), where N is the average # of new tasks each shaft and slope construction worker is assigned annually (N=4).

[c] Training cost for each task = $[T \times (W_s + W_w)]$, where T is equal to the number of non-production hours it would take a health and safety instructor to train a shaft and slope contruction worker (T= 0.5 hours), W_s is the hourly wage rate for a supervisor or miner experienced in the task (W_s = $30); and W_w is the hourly wage rate for a contractor worker (W_w = $18).

§ 48.8 and § 48.28 Annual refresher training of miners; minimum courses of instruction; hours of instruction.

This provision would require contractor firms to provide eight hours of annual refresher training to employed shaft and slope construction workers.   This training would be required within 12 months of the effective date of the rule. It is a standard practice for contractor firms to send their employees to an independent contract trainer for annual refresher training. We assume that these contractor firms are going to do the same for shaft and slope construction workers. The instructor cost is estimated to be is $25 per contractor worker. Table IV-12 estimates the costs related to annual refresher training.

Table IV-12: Annual Refresher Training Costs that Contractor Firms Would Have to Incur in Accordance with § 48.8 and § 48.8

| Contractor Firm Size | Coal | | |
	# of Contractor Workers[a]	Cost to Train a Contractor Worker[b]	Total Cost
Small (< 20)	0	$169	$0
Large (20-500)	570	$169	$96,330
Large (> 500)	0	$169	$0
Contractor Firm Size	M/NM		
	# of Contractor Workers[a]	Cost to Train a Contractor Worker[b]	Total Cost
Small (< 20)	0	$169	$0
Large (20-500)	120	$169	$20,280
Large (> 500)	0	$169	$0

[a] # of contractor workers comes from Table IV-2 (average # of shaft and slope construction workers in 2003).

[b] Cost to train a contractor worker = [$25 + (8 * $18)], where $25 is the instructor cost per contractor worker to provide annual refresher training; 8 is the number of hours spent to receive annual refresher training; and $18 is the hourly wage rate for a contractor worker.

§ 48.9 & § 48.29 Records of training.

Upon a shaft and slope construction worker's completion of each MSHA approved training program, the contractor firm must record and certify on MSHA form 5000-23 that the contractor worker has received the specified training. A copy of the training certificate must be given to the shaft and slope construction worker at the completion of the training. The training certificates for each miner must be available at the mine site for inspection by MSHA and for examination by the contractor worker, the contractor workers' representative, and State inspection agencies.

It would take about a minute (or 0.0167 hours) of a contractor worker's time to read over a training form and sign it. In turn, the clerical would take about a minute to file a training form. Recordkeeping has to be done for training of new miners, experienced miner training, task training, annual refresher training, and hazard training. Table IV-13 estimates the recordkeeping costs of this proposed rule.

Table IV-13: Costs that Contractor Firms Would Have to Incur to Record Training in Accordance with § 48.9 and § 48.29

Contractor Firm Size	Coal										Yearly Costs
	§ 48.5 & § 48.25		§ 48.6 & § 48.26		§ 48.7 & § 48.27		§ 48.8 & § 48.28		§ 48.11 & § 48.31		
	# of Contractor Workers[a]	Total Cost[b]	# of Contractor Workers[c]	Total Cost[b]	# of Contractor Workers[d]	Total Cost[b]	# of Contractor Workers[e]	Total Cost[b]	# of Contractor Workers[f]	Total Cost[b]	
Small (< 20)	0	$0	0	$0	0	$0	0	$0	0	$0	$0
Large (20-500)	57	$31	114	$62	570	$308	570	$308	570	$308	$1,017
Large (> 500)	0	$0	0	$0	0	$0	0	$0	0	$0	$0

Contractor Firm Size	M/NM										Yearly Costs
	§ 48.5 & § 48.25		§ 48.6 & § 48.26		§ 48.7 & § 48.27		§ 48.8 & § 48.28		§ 48.11 & § 48.31		
	# of Contractor Workers[a]	Total Cost[b]	# of Contractor Workers[c]	Total Cost[b]	# of Contractor Workers[d]	Total Cost[b]	# of Contractor Workers[e]	Total Cost[b]	# of Contractor Workers[f]	Total Cost[b]	
Small (< 20)	0	$0	0	$0	0	$0	0	$0	0	$0	$0
Large (20-500)	12	$6	24	$13	120	$65	120	$65	120	$65	$214
Large (> 500)	0	$0	0	$0	0	$0	0	$0	0	$0	$0

[a] # of contractor workers comes from Table IV-7 and Table IV-8.

[b] Total cost = $(T_s \times$ # of contractor workers $\times W_s) + (T_c \times$ # of contractor workers $\times W_c)$, where T_s is the amount of time it would take for a contractor worker to read and sign form 5000-23 ($T_s = 0.0167$ hours) ; W_s is the hourly wage rate for a contractror worker ($W_s = \$18$); T_c is the amount of time it would take for a clerical worker to file a training form ($T_c = 0.0167$ hours); and W_c is the hourly wage rate for a clerical worker ($W_c = \$14.43$).

[c] # of contractor workers comes from Table IV-10.

[d] # of contractor workers comes from Table IV-11.

[e] # of contractor workers comes from Table IV-12.

[f] # of contractor workers comes from Table IV-14.

§ 48.11 and § 48.31 Hazard training.

      This section would require mine operators to provide hazard training to shaft and slope construction workers. It generally would take about 15 minutes to conduct hazard training for all shaft and slope construction workers at the mine. The cost related to this provision is the time spent to receive hazard training. There would be no additional cost to mine operators because shaft and slope construction workers could attend the same hazard training session that the mine operators provide to their other miners. Table IV-14 estimates hazard training costs.

Table IV-14: Annual Hazard Training Costs that Contractor Firms Would Have to Incur in Accordance with § 48.11 and § 48.31

| Contractor Firm Size | Coal | | |
	# of Contractor Workers[a]	Cost for Contractor Worker to Receive Training[b]	Total Annual Cost
Small (< 20)	0	$5	$0
Large (20-500)	570	$5	$2,565
Large (> 500)	0	$5	$0

| Contractor Firm Size | M/NM | | |
	# of Contractor Workers[a]	Cost for Contractor Worker to Receive Training[b]	Total Annual Cost
Small (< 20)	0	$5	$0
Large (20-500)	120	$5	$540
Large (> 500)	0	$5	$0

[a] # of contractor workers comes from Table IV-2.

[b] Cost for contractor worker to receive training = (T x W_s), where T is the number of hours it would take for a contractor worker to receive hazard training (T = 0.25 hours or 15 minutes); and W_s is the hourly wage rate for a contractor worker (W_s = $18).

FEASIBILITY

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

This proposed rule is not a technology-forcing standard and does not involve activities on the frontiers of scientific knowledge. In addition, it would not require the purchase of any machinery or equipment to implement these training plans as prescribed in part 48. Therefore, we have concluded that this proposed rule is technologically feasible.

As previously stated in this chapter, the total costs of the proposed rule are about $161,000 annually for all coal contractor firms and $34,000 annually for all M/NM contractor firms. We had to combine these coal and M/NM contractor firms together to estimate the yearly revenues because these contractor firms are not generally limited to one industry, and they could do shaft and slope construction work at both coal and M/NM mines. These compliance costs are well under 1 percent of the yearly revenues of $232 million for these contractor firms.[22] We believe this is convincing evidence that the proposed rule is economically feasible.

---

[22] U.S. Department of Labor Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, 2002 data. MSHA-IRC: CT441 report Cycle 2002/381. Average U.S. coal price came from U.S. Department of Energy, Energy Information Administration, Annual Coal Report 2001, DOE/EIA-0584 (2001), March 2003, p. 52.

V. REGULATORY FLEXIBILITY CERTIFICATION

INTRODUCTION

Pursuant to the Regulatory Flexibility Act of 1980 as amended, MSHA has analyzed the impact of the proposed part 48 rule on small businesses. Further, MSHA has made a determination with respect to whether or not the Agency can certify that the proposed rule would not have a significant economic impact on a substantial number of small entities that are covered by this rulemaking. Under the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act (RFA), MSHA must include in the rule a factual basis for this certification. If the proposed rule would have a significant economic impact on a substantial number of small entities, then the Agency must develop an initial regulatory flexibility analysis.

DEFINITION OF A SMALL MINE

Under the RFA, in analyzing the impact of a proposed rule on small entities, we must use the SBA definition for a small entity, or after consultation with the SBA Office of Advocacy, establish an alternative definition for the mining industry by publishing that definition in the Federal Register for notice and comment. We have not taken such an action, and hence are 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). All of the underground coal and M/NM contractor firms affected by this rulemaking fall into this category, and hence can be viewed as sharing the special regulatory concerns which the RFA was designed to address.

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

This analysis complies with the legal requirements of the RFA for an analysis of the economic impacts on "small entities" while continuing the Agency's traditional look at "small mines." We conclude that we can certify that the proposed part 48 rule would not have a significant economic impact on a substantial number of small entities that are covered by this rulemaking.

FACTUAL BASIS FOR CERTIFICATION

General Approach

Our analysis of economic impacts on "small entities" begins with a "screening" analysis. The screening compares the estimated compliance costs of a proposed rule for small entities in the sector covered by the rule to the estimated revenues for those small entities. When estimated compliance costs are less than 1 percent of the estimated revenues (for the size categories considered), we believe it is generally appropriate to conclude that there is no significant economic impact on a substantial number of small entities. When estimated compliance costs exceed 1 percent of revenues, it tends to indicate that further analysis may be warranted.[23]

Derivation of Costs and Revenues

The compliance costs noted in this chapter were previously presented in Chapter IV of this document along with an explanation of how they were derived.

Both coal and M/NM contractor firms would incur costs to comply with this proposed rule. We examined the relationship between costs and revenues for the coal and M/NM contractor sectors as two independent entities in Chapter IV, rather than combining them into one category. However, we had to combine these two entities together to perform impact analysis in this chapter for the following reasons. Most of the 23 coal and M/NM contractor firms affected by this proposed rule are privately owned and do not make their financial data available to the public. The only two contractor firms for which we were able to obtain financial data were listed as coal contractor firms.[24] However, these contractor firms are not generally limited to one industry, and they could do shaft and slope construction work at both coal and M/NM mines. This is a normal practice for this industry.

---

[23] MSHA has traditionally used a revenue screening test—whether the yearly costs of a regulation equal or exceed 1 percent of revenues—to determine whether the regulation might possibly have a significant economic impact on a substantial number of small entities. The Agency recognizes the theoretical usefulness of evaluating the effects of a regulation on profits (rather than on revenues). MSHA is currently investigating the future use of profitability analysis to evaluate whether its rules would have a significant impact on a substantial number of small entities. However, given that the yearly costs of the proposed part 48 rule is minuscule relative to revenues for any subset of small entities, MSHA is confident that, given the selection and use of any reasonable profitability test, the proposed part 48 rule would be found not to have a significant economic effect on a substantial number of small entities.

[24] The source of the financial data for these two contractor firms was the Thomas Registry, located online at www.thomasregistry.com. Thomas Register is an online resource for finding companies and products manufactured in North America.

We used available financial data for the two publicly-traded, middle-sized contractor firms[25] together with *Industry Norms & Key Business Ratios*[26] and extrapolated the revenues to estimate revenues for the entire shaft and slope contractor industry. The financial data for each of the two contractor firms was a range of assets (i.e., $1 million to $5 million; $25 million to $50 million). To be conservative, we chose to use the lower bound for the reported assets to calculate the average assets for a contractor firm. The next step was to use the assets to sales ratio for the mining industry from *Industry Norms & Key Business Ratios*[27] to obtain an estimate of average revenues for each contractor firm. Then, we multiplied that revenue number by the 23 contractor firms (from Table IV-2).

Results of Screening Analysis

As shown in Table V-1, the combined estimated yearly cost of the proposed rule for both coal and M/NM contractor firms is about $195,000. For both industries, costs as percentage of revenues are well below one percent (0.08 percent for coal and M/NM contractor firms) and, therefore, we conclude that there would be no significant economic impact on a substantial number of small entities.

TABLE V-1: The Impact of Proposed Rule on the Underground Coal and M/NM Contractor Firms

Mine Type	Estimated Net Cost[a]	Estimated Revenue[b]	Costs as % of Revenue
Contractor Firms (20 - 500)	$ 194,872	$ 231,962,762	0.08%

[a] Estimated net cost comes from Table IV-1.

[b] Estimated revenue was dervied from the Thomas Registry, at www.thomasregistry.com and from *Industry Norms & Key Business Ratios*.

As required under the law, we are complying with our obligation to consult with the Chief Counsel for Advocacy on this proposed rule, and on the Agency's certification of no significant economic impact on a substantial number of small entities covered by this proposed rule. Consistent with Agency practice, notes of any meetings with the

---

[25] Since there were no costs to either small coal or M/NM contractor firms that employ between one to 19 contractor employees, we did not perform separate impact analysis for that mine size category. To satisfy the requirements of SBREFA, we only have to consider a subset of the SBA's definition of "small entities"—contractor firms that employ 20-500 contractor workers

[26] *Industry Norms & Key Business Ratios*, pp. 8-10.

[27] The assets to sales ratio is calculated by taking the average assets to sales ratio (of 128.9%) for coal, metal and non-metallic mineral operations, excluding fuel.

Chief Counsel's office on this final rule, or any written communications, will be placed in the rulemaking record.

VI. THE UNFUNDED MANDATES REFORM ACT OF 1995 AND OTHER REGULATORY CONSIDERATIONS

THE UNFUNDED MANDATES REFORM ACT

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

Background

The Unfunded Mandates Reform Act was enacted in 1995. While much of the Act is designed to assist the Congress in determining whether its actions will impose costly new mandates on State, local, and tribal governments, the Act also includes requirements to assist Federal agencies to make this same determination with respect to regulatory actions.

Analysis

Based on the analysis in this PREA, compliance with this proposed rule would cost approximately $161,000 annually for coal contractor firms covered by this rulemaking and $34,000 annually for M/NM contractor firms covered by this rulemaking. In addition, coal contractor workers would incur costs of about $20,000 annually, and M/NM contractor workers would incur costs of about $4,000 annually. Accordingly, there is no need for further analysis under § 202 of the Unfunded Mandates Reform Act.

We have concluded that small governmental entities would not be significantly or uniquely impacted by the proposed regulation. The proposed rule would affect about 19 coal contractor firms and 4 M/NM contractor firms that work for either underground coal or M/NM mining operations.

NATIONAL ENVIRONMENTAL POLICY ACT

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

MSHA has assessed the environmental impacts as follows: This proposed rule would have no significant impact on air, water or soil quality, plant or animal life, the use

of land, or other aspects of the human environment. MSHA solicits public comment concerning the accuracy and completeness of this environmental assessment.

As a result of this environmental assessment, MSHA finds that the proposed rule would have no significant impact on the human environment. Accordingly, MSHA has not provided an environmental impact statement.

ASSESSMENT OF FEDERAL REGULATIONS AND POLICIES ON FAMILIES

This proposed rule would have no affect on family well-being or stability, marital commitment, parental rights or authority, or income or poverty of families and children. Accordingly, Section 654 of the Treasury and General Government Appropriations Act of 1999 requires no further agency action, analysis, or assessment.

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

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

EXECUTIVE ORDER 12988: CIVIL JUSTICE REFORM

This proposed rule was drafted and reviewed in accordance with Executive Order 12988, Civil Justice Reform. This proposed rule was written to provide a clear legal standard for affected conduct and was carefully reviewed to eliminate drafting errors and ambiguities, so as to minimize litigation and undue burden on the Federal court system. MSHA has determined that this proposed rule would meet the applicable standards provided in Section 3 of Executive Order 12988.

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

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

EXECUTIVE ORDER 13132: FEDERALISM.

This proposed rule would not have "federalism implications," because it would not "have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Accordingly, Executive Order 13045, Federalism, requires no further agency action or analysis.

EXECUTIVE ORDER 13175: CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS.

This proposed rule would not have "tribal implications," because it would not "have substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes." Accordingly, Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, requires no further agency action or analysis.

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

In accordance with Executive Order 13211, MSHA has reviewed this proposed rule for its impact on the supply, distribution, and use of energy. This proposed rule would regulate both the coal and metal/nonmetal mining sectors. Because this proposed rule would result in yearly net costs of $ 161,000 (less than one percent of revenues) to the coal mining industry, the proposed rule would neither significantly reduce the supply of coal nor significantly increase its price. Regulation of the metal/nonmetal sector of the mining industry has no significant impact on the supply, distribution, or use of energy.

This proposed rule is not a "significant energy action," because it would not be "likely to have a significant adverse effect on the supply, distribution, or use of energy" "(including a shortfall in supply, price increases, and increased use of foreign supplies)." Accordingly, Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use, requires no further agency action or analysis.

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

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

VII. THE PAPERWORK REDUCTION ACT OF 1995

INTRODUCTION

The purpose of this chapter is to show the burden hours and related costs which are borne by underground coal and M/NM contractor firms as a result of the proposed rule. The costs in this chapter are derived from Chapter IV of this PREA. However, in this chapter, we estimate costs only in relation to the burden hours that the final rule imposes. Therefore, not all costs derived in Chapter IV appear below. Those costs derived in Chapter IV that do not have burden hours related to them do not appear in this chapter.

SUMMARY OF PAPERWORK BURDEN HOURS AND RELATED COSTS

The proposed part 48 rule has two provisions in sections 48.3 and 48.23 that impose a paperwork burden requirement.   This requirement does not involve a new training plan. It just requires shaft and slope contractor firms to report paperwork burden hours and costs in the same manner as mine operators, and the reporting of this paperwork burden requirement is approved under OMB control number 1219-0009. Underground coal contractor firms would incur about 171 paperwork burden hours in the first year, with associated burden hours costs of $785; underground M/NM contractor firms would incur about 36 paperwork burden hours in the first year, with associated burden hours costs of $178. Total first year burden hours consist of two components: first year burden hours and annual burden hours starting in year one. Total first year costs are equal to the total annualized costs in the first year plus total annual costs starting in year one. There would be 138 burden hours in the first year only for underground coal contractor firms with associated costs of $4,127, which is equivalent to $289 of annualized costs; there would be 32 burden hours in the first year only for underground M/NM contractor firms with associated costs of $869, which is equivalent to $61 of annualized costs (from Table VII-1). Annual burden hours starting in year two are those that occur every year after year one—the sum of annual burden hours starting in year one plus annual burden hours starting in year two. Table VII-3 and Table VII-4 present annual burden hours starting in year one and associated costs, and Table VII-2 presents annual burden hours starting in year two. Underground coal contractor firms would incur about 52 annual burden hours starting in year two and associated costs of $1,066; underground M/NM contractor firms would incur about 11 annual burden hours starting in year two and associated costs of $237.

§ 48.3 & § 48.23 training plans; time of submission; where filed; information required; time for approval; commencement of training; approval of instructors.

This section would require each contractor firm employing shaft and slope construction workers to have an MSHA approved training plan. The plan must contain training requirements for underground miners. In most cases, the plan would also contain a surface component for miners who work exclusively at surface areas of slope and shaft operations.

It would take a contactor, on average, 6.2 hours to develop such a training plan. In addition to the time for developing a training plan, a contractor would need an additional hour to submit an application to the District Manager to become an approved training instructor. The wage rate for a contractor is $30 an hour. It would take a clerical worker, making $14.43 an hour, 0.0833 hours (or 5 minutes) to distribute or post a training plan. Table VII-1 provides first year paperwork burden hours and costs related to training plans for this proposed rule.

Table VII-1: First-Year Paperwork Burden Costs to Contractor Firms in Accordance with § 48.3 & § 48.23

Contractor Firm Size	Coal			
	# of Contractor Firms[a]	# of Burden Hours per Mine to Comply with This Section [b]	Total # of Paperwork Burden Hours[c]	Total Annualized Costs[d]
Small (< 20)	0	7.28	0	$0
Large (20-500)	19	7.28	138	$289
Large (> 500)	0	7.28	0	$0
	M/NM			
	# of Contractor Firms[a]	# of Burden Hours per Mine to Comply with This Section [b]	Total # of Paperwork Burden Hours[c]	Total Annualized Costs[d]
Small (< 20)	0	7.28	0	$0
Large (20-500)	4	7.28	29	$61
Large (> 500)	0	7.28	0	$0

[a] # of contractor firms comes from Table IV-2.

[b] # of burden hours per mine to comply with these to develop training plans & submit application to become approved trainer comes from Table IV-3 (it would take a contractor 7.2 hours to develop a training plan and submit an application to become an approved trainer; and it would take a clerical worker 0.083 hours to distribute or post a training plan).

[c] Total # of paperwork burden hours = (# of contractor firms x # of hours to develop training plans & submit application to become approved trainer).

[d] Total annualized costs = {[(7.2 hours x $30) + (0.083 hours x $14.43)] x # of contractor firms x a}, where 7.2 is the # of hours a contractor worker would need to develop a training plan and submit an application to become an approved instructor; $30 is the hourly wage rate for a contractor worker; 0.083 hours is the # of hours it would take for a clerical worker to distribute/post a training plan; $14.43 is the hourly wage rate for a clerical worker; and a is the annualization factor (a = 0.07).

It would take about one hour for a contractor to update and keep the training plan current. This would be done starting in year two. This cost is presented in Table VII-2.

Table VII-2: Annual Paperwork Burden Hours and Costs to Contractor Firms Starting in Year Two in Accordance with § 48.3 & § 48.23

| Contractor Firm Size | Coal | | | |
	# of Contractor Firms[a]	# of Burden Hours per Mine to Update a Training Plan[b]	Total # of Paperwork Burden Hours	Total Annual Costs[c]
Small (< 20)	0	1	0	$0
Large (20-500)	19	1	19	$570
Large (> 500)	0	1	0	$0

| Contractor Firm Size | M/NM | | | |
	# of Contractor Firms[a]	# of Burden Hours per Mine to Update a Training Plan[b]	Total # of Paperwork Burden Hours	Total Annual Costs[c]
Small (< 20)	0	1	0	$0
Large (20-500)	4	1	4	$120
Large (> 500)	0	1	0	$0

[a] # of contractor firms comes from Table IV-2.

[b] Annual cost to update training plan = $(T_p \times W_s)$, where T_p is the number of hours it would take for a contractor to update training plan annually ($T_p = 1$ hour); and W_s is the hourly wage rate for a health and safety instructor ($W_s = \$30$).

[c] Total annual costs = (total # of paperwork burden hours x $30), where $30 is the hourly wage rate for a contractor worker.

MSHA recognizes that there could be new contractor firms entering the industry. Some of these new contractor firms who have done other types of work on mine property would already have an approved training plan. Therefore, there would be no additional cost related to development of a new or separate training plan for shaft and slope construction workers. For those new contractor firms coming into the industry that do not already have a part 48 training plan, the cost related to developing a training plan would the same as indicated above. MSHA estimates that there would be approximately 0.20 such coal contractor firms and 0.10 M/NM contractor firms coming into the industry every year. Table IV-3 presents the costs related to new contractor firms coming into the industry.

Table VII-3: Annual Paperwork Burden Hours and Costs for New Contractor Firms Starting in Year One in Accordance with § 48.3 & § 48.23

Contractor Firm Size	Coal			
	# of New Contractor Firms[a]	# of Burden Hours per Mine to Comply with This Section [b]	Total # of Paperwork Burden Hours[c]	Total Annualized Costs[d]
Small (< 20)	0	7.28	0	$0
Large (20-500)	0.20	7.28	1.46	$44
Large (> 500)	0	7.28	0	$0
Contractor Firm Size	M/NM			
	# of New Contractor Firms[a]	# of Burden Hours per Mine to Comply with This Section [b]	Total # of Paperwork Burden Hours	Total Annual Costs[c]
Small (< 20)	0	7.28	0	$0
Large (20-500)	0.10	7.28	0.73	$22
Large (> 500)	0	7.28	0	$0

[a] # of contractor firms comes from Table IV-4.

[b] # of burden hours per mine to comply with these to develop training plans & submit application to become approved trainer comes from Table IV-3 (it would take a contractor 7.2 hours to develop a training plan and submit an application to become an approved trainer; and it would take a clerical worker 0.083 hours to distribute or post a training plan).

[c] Total # of paperwork burden hours = (# of contractor firms x # of hours to develop training plans & submit application to become approved trainer).

[d] Total annual costs = {[(7.2 hours x $30) + (0.083 hours x $14.43)] x n}, where 7.2 is the # of hours a contractor worker would need to develop a training plan and submit an application to become an approved instructor; $30 is the hourly wage rate for a contractor worker; 0.083 hours is the # of hours it would take for a clerical worker to distribute/post a training plan; $14.43 is the hourly wage rate for a clerical worker; and n is the # of new contractor firms.

§ 48.9 & § 48.29 Records of training.

Upon a shaft and slope construction worker's completion of each MSHA approved training program, the contractor firm must record and certify on MSHA form 5000-23 that the contractor worker has received the specified training. The training certificates for each miner must be available at the mine site for inspection by MSHA and for examination by the contractor worker, the contractor workers' representative, and State inspection agencies.

It would take about a minute (or 0.0167 hours) of a clerical worker's time to distribute and to file a training form for each contractor worker. Recordkeeping has to be done for training of new miners, experienced miner training, task training, annual refresher training, and hazard training. Table VII-4 estimates the recordkeeping costs borne by contractor firms in accordance with § 48.9 & § 48.29.

Table VII-4: Annual Records of Training Costs that Contractor Firms Would Have to Incur in Accordance with § 48.9 & § 48.29

Contractor Firm Size	Coal						
	# of Contractor Workers Under § 48.5 & § 48.25[a]	# of Contractor Workers Under § 48.6 & § 48.26[b]	# of Contractor Workers Under § 48.7 & § 48.27[c]	# of Contractor Workers Under § 48.8 & § 48.28[d]	# of Contractor Workers Under § 48.11 & §48.31[e]	Total Annual Burden Hours[f]	Total Annual Costs[g]
Small (< 20)	0	0	0	0	0	0	$0
Large (20-500)	57	114	570	570	570	31.4	$452
Large (> 500)	0	0	0	0	0	0	$0

Contractor Firm Size	M/NM						
	# of Contractor Workers Under § 48.5 & § 48.25[a]	# of Contractor Workers Under § 48.6 & § 48.26[b]	# of Contractor Workers Under § 48.7 & § 48.27[c]	# of Contractor Workers Under § 48.8 & § 48.28[d]	# of Contractor Workers Under § 48.11 & §48.31[e]	Total Annual Burden Hours[f]	Total Annual Costs[g]
Small (< 20)	0	0	0	0	0	0	$0
Large (20-500)	12	24	120	120	120	6.6	$95
Large (> 500)	0	0	0	0	0	0	$0

[a] # of contractor workers comes from Table IV-7 and Table IV-8.

[b] # of contractor workers comes from Table IV-9.

[c] # of contractor workers comes from Table IV-10.

[d] # of contractor workers comes from Table IV-11.

[e] # of contractor workers comes from Table IV-13.

[f] Total annual burden hours = [total # of contractor workers (under § 48.5, § 48.6, § 48.7, § 48.8, and § 48.11) x T_c), where T_c is the amount of time it would take for clerical worker to distribute and to file a training form for each contractor worker (T_c = 0.0167 hours).

[g] Total cost = (total annual burden hours x W_c), where W_c is the hourly wage rate for a clerical worker (W_c = $14.43).

REFERENCES

1. Dun & Bradstreet, Inc. *Industry Norms & Key Business Ratios, 2000-2001*. Desk-Top Edition SIC #0100-8999, 2001.

2. U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2001*, March 2003.

3. U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2003*, January 2003.

4. U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2001*, DOE/EIA-0384(2001), November 2002.

5. U.S. Department of the Interior, U.S. Geological Survey, *Mineral Commodity Summaries 2003*, January 2003.

6. U.S. Department of Labor, Mine Safety and Health Administration, Division of Mining Information Systems, *Coal 2002 Size-Group Report* (Final), MSHA-IRC: CT 441, Cycle 2002/381.

7. U.S. Department of Labor, Mine Safety and Health Administration, Office of Program Evaluation and Information Resources, calendar year 2002 data.