

PRELIMINARY REGULATORY FLEXIBILITY ANALYSIS
PROPOSED REGULATIONS IMPLEMENTING THE
FEDERAL COAL MINE HEALTH AND SAFETY ACT OF 1969

Prepared for the

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I. INTRODUCTION

The Regulatory Flexibility Act of 1980, as amended,¹ requires agencies to perform a regulatory flexibility analysis for any regulation that has a significant impact on a substantial number of small entities.² While the definitions of “significant” and “substantial” are both subject to interpretation, the practice recommended by the Small Business Administration is to perform at least a preliminary regulatory flexibility analysis for all regulations that affect more than a handful of small entities. Accordingly, the Department of Labor has prepared a regulatory flexibility analysis for the proposed amendments to regulations to implement the Black Lung Benefits Act.

In practice, the RFA requirements, which are designed to minimize regulatory impacts on small entities, can be summarized by two principal imperatives:

- An agency must identify affected small businesses and assess the impacts on them, as opposed to the impacts on the industry as a whole.
- An agency must consider and assess regulatory alternatives for small businesses that would minimize small-business impacts and adopt such alternatives to the greatest extent that does not compromise the purposes of the regulation.

The rationale behind a regulatory flexibility analysis is that regulatory compliance costs are often subject to substantial economies of scale. As a consequence, small businesses often bear disproportionately -- sometimes highly disproportionately -- large costs. Where this is the case, regulations can put small businesses at a competitive disadvantage. At the same time, small businesses frequently contribute a disproportionately small part of the problem addressed by a regulation.³ In such a case, regulation of small businesses produces relatively few benefits to society. Where either -- or both -- of these conditions exists, regulation of small businesses in the same manner as large businesses may well reduce the total net benefits of the regulation to society. Regulatory flexibility analysis is designed to identify, address, and correct such situations.

A regulatory flexibility analysis also serves a useful function in the scope of a regulatory impact analysis as a whole. A separate analysis of the smallest -- and presumably most vulnerable -- businesses affected by a regulation serves as a type of sensitivity analysis for the regulation as a whole. Clearly significant impacts on small businesses may serve as a warning to

¹ The Regulatory Flexibility Act (P.L. 96-354) will be referenced as the RFA. The Small Business Regulatory Enforcement Fairness Act of 1996 (P.L. 104-121), or SBREFA, is a recent and significant amendment.

² “Small entities” include small businesses, small governmental units, and small non-profit organizations. This regulation affects only small businesses.

³ This does not appear to be true in the coal industry. Mine Safety and Health Administration data indicates that small mines, those with fewer than fifty employees, have higher levels of health and safety violations than the industry generally.

examine impacts on the industry as a whole more thoroughly, and consideration of regulatory flexibility alternatives may be helpful in developing alternatives for the regulation a whole. Thus, irrespective of whether distinct regulatory alternatives for small businesses are adopted, regulatory flexibility analysis enhances the quality of a regulatory impact analysis.

II. INDUSTRY PROFILE

Regulatory flexibility analysis requires a characterization of the affected industries, disaggregated by characteristics that may affect the level of regulatory impacts. For regulations implementing the Black Lung Benefits Act, the following characteristics are relevant:

- The specific industry;
- Location of the mine, by state;
- Size of the firm;
- The type of insurance coverage;
- The labor intensity of the mining operation; and
- The market for coal.

These characteristics of affected businesses are discussed below.

A. INDUSTRY

1. Coal Mining

a. Coal Mining Industries

The Black Lung Benefits Act requires employers engaged in the extraction and preparation of coal to pay and to “secure the payment” of benefits (i.e., provide insurance coverage) to former employees for which they are found liable. Thus the full requirements of the Act apply only to the coal mining industry (SIC 12). Exhibit A shows the number of establishments⁴ in surface mining of bituminous coal and lignite (SIC 1221); underground

⁴ Exhibit A is based on data published by MSHA in “Mine Injuries and Worktime, Quarterly Closeout Edition for 1995.” Data for 1995 are presented in all tables and used in the analysis, since that is the last year in which in data from all sources used in the analysis are available. Exhibit A excludes free-standing offices and shops/yards, as well as the employment associated with these units, since employees there may not be covered by the Act. Published data in Exhibit A, Exhibit H, and Exhibit I differ slightly from data presented in Exhibit B, Exhibit C, Exhibit D, Exhibit E, and Exhibit F. These five exhibits and the related analysis were derived from a database provided by MSHA. Manipulation of the data (e.g., computation of average employment or establishments for a year) appear to have resulted in slight discrepancies in the totals found in the two sets of data.

mining of bituminous coal and lignite (SIC 1222); and mining of anthracite coal (SIC 1231), which are the industries that engage in extraction and preparation of coal.

EXHIBIT A ESTABLISHMENTS, EMPLOYMENT, AND PRODUCTION IN THE COAL INDUSTRY^a			
	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
Establishments^b	1,588	1,028	218
Employment^c	43,427	51,510	1,671
Production^d	629,731,928	395,454,398	4,330,078
^a SOURCE: Mine Safety and Health Administration. Data are for 1995. ^b Mines and milling/preparation plants. (Milling/preparation plants are included under surface mining.) Independent shops and offices are excluded. Establishments are defined by MSHA mine ID numbers, which represent one mine operator working at one location but may include several physically distinct subunits. ^c Employees at mines. ^d Short tons.			

Exposures to coal dust, benefit claims, insurance rates, and regulatory costs are higher for underground mining as a whole than for surface mining. The composition of anthracite coal and the strata in which it is found make exposures to coal dust, benefit claims, insurance rates, and regulatory costs higher for anthracite coal than for bituminous coal and lignite.

b. Employment

Exhibit A shows employment in coal mines, as of 1995. Employment has been decreasing steadily for the last 15 years. In 1997, employment had fallen to 39,757 in bituminous surface mining and to 46,983 in bituminous underground mining, but had risen slightly to 1,847 in anthracite mining. Not all employees in SIC 1221, SIC 1222, and SIC 1231 are engaged in extraction and preparation of coal. These issues will be developed further below.

c. Production

Exhibit A also shows coal production in each of the three coal mining industries, as of 1995. Total coal production in 1995 was about one billion short tons, and it is increasing at about one percent per year. In 1997, production had risen to 1.09 billion short tons (667.07 million short tons in bituminous surface mining, 419.24 million short tons in bituminous underground mining, and 4.96 million short tons in anthracite mining). Surface mining accounts for over 60 percent of all coal. Trends will be discussed further below.

2. Other Industries

Workers in other industries who are exposed to coal dust at mines may contract black lung disease and be eligible for benefits. In this case, the employer may be responsible for the cost of the benefits. The industries that may incur such costs are transportation and construction, whose workers may enter mines and be exposed to coal dust. Because these employers are not engaged in extraction and preparation of coal, they are not required by the Act to “secure the payment” of benefits. Nevertheless, some of these employers do obtain insurance.

Data limitations preclude considering these industries in the analysis. Data are available only for identification of the companies that voluntarily decide to purchase commercial insurance. Data are not available on the number or size of non-mining companies with employee exposure to coal mine dust. We will assume that impacts on them are no more significant than coal mine impacts.

B. STATE

Exhibit B shows the distribution of coal mines by state. The coal mining industry is heavily concentrated in a few states: Wyoming accounts for over one quarter of all coal mined, and Kentucky and West Virginia account for about one sixth each. Anthracite is commercially mined only in Pennsylvania. Underground mining generally predominates in eastern states, although Indiana and Ohio are exceptions and there is also extensive surface mining in Kentucky and West Virginia. In western states (except Colorado and Utah), surface mining is dominant.

Each state regulates its insurance industry. In addition, states set the insurance premiums for the state assigned risk pools, which serve as the insurer of last resort and function as a cap on commercial insurance rates. Because of these individual state actions, black lung insurance premiums differ systematically by state.

C. FIRM SIZE

1. Definition of “Small”

In most industries, including coal mining, the vast majority of firms are small by any definition, but small businesses account for a far smaller share of employment and output. From a purely statistical perspective, relatively high costs to small businesses get washed out when they are averaged in with costs to larger businesses. Identification of disproportionately large impacts on small businesses depends on having a working definition of “small” that is reasonably accurate in separating average compliance costs from disproportionately high costs. Such a cut-off varies with the specific costs of each regulation, but it is likely to be in the range of 10 to 50 employees.⁵

⁵ Census data are published in size classes of 10 to 19 employees and 20 to 49 employees, which constrains the available choices in this size range.

EXHIBIT B
ESTABLISHMENTS, EMPLOYMENT, AND PRODUCTION
IN COAL MINING, BY STATE^a

	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
Alabama			
Establishments ^b	85	11	-
Employment ^c	1,637	4,285	-
Production ^d	7,366,140	17,726,768	-
Alaska			
Establishments ^b	2	1	-
Employment ^c	128	4	-
Production ^d	1,669,618	e	-
Arizona			
Establishments ^b	3	-	-
Employment ^c	842	-	-
Production ^d	11,862,917	-	-
Arkansas			
Establishments ^b	5	1	-
Employment ^c	14	1	-
Production ^d	36,706	e	-
California			
Establishments ^b	3	-	-
Employment ^c	48	-	-
Production ^d	81,621	-	-
Colorado			
Establishments ^b	13	13	-
Employment ^c	791	1,330	-
Production ^d	8,792,976	16,152,362	-
Illinois			
Establishments ^b	34	37	-
Employment ^c	1,996	4,423	-
Production ^d	2,867,931	14,356,981	-

EXHIBIT B
(continued)

	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
Indiana			
Establishments ^b	50	3	-
Employment ^c	2,289	277	-
Production ^d	22,631,747	2,004,413	-
Kansas			
Establishments ^b	1	-	-
Employment ^c	65	-	-
Production ^d	284,787	-	-
Kentucky			
Establishments ^b	413	373	-
Employment ^c	9,094	13,401	-
Production ^d	57,552,238	92,806,034	-
Louisiana			
Establishments ^b	2	-	-
Employment ^c	134	-	-
Production ^d	3,382,334	-	-
Maryland			
Establishments ^b	19	3	-
Employment ^c	228	262	-
Production ^d	774,595	3,042,185	-
Missouri			
Establishments ^b	10	-	-
Employment ^c	211	-	-
Production ^d	545,282	-	-
Montana			
Establishments ^b	6	1	-
Employment ^c	996	17	-
Production ^d	40,029,791	7,800	-

EXHIBIT B
(continued)

	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
New Mexico			
Establishments ^b	7	-	-
Employment ^c	1,842	-	-
Production ^d	25,858,819	-	-
North Dakota			
Establishments ^b	7	-	-
Employment ^c	1,001	-	-
Production ^d	30,064,896	-	-
Ohio			
Establishments ^b	136	9	-
Employment ^c	1,950	1,675	-
Production ^d	13,190,017	12,909,817	-
Oklahoma			
Establishments ^b	12	2	-
Employment ^c	220	57	-
Production ^d	1,826,423	45,228	-
Pennsylvania			
Establishments ^b	333	52	221
Employment ^c	3,344	5,308	1,765
Production ^d	16,609,882	41,614,037	3,668,316
Tennessee			
Establishments ^b	25	15	-
Employment ^c	339	360	-
Production ^d	1,232,211	1,863,560	-
Texas			
Establishments ^b	18	-	-
Employment ^c	2,902	-	-
Production ^d	57,756,051	-	-

EXHIBIT B
(continued)

	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
Utah			
Establishments^b	3	15	-
Employment^c	25	1,996	-
Production^d	f	25,100,795	-
Virginia			
Establishments^b	87	168	-
Employment^c	2,142	5,188	-
Production^d	8,934,066	25,667,398	-
Washington			
Establishments^b	2	-	-
Employment^c	642	-	-
Production^d	4,856,769	-	-
West Virginia			
Establishments^b	227	315	-
Employment^c	7,503	14,953	-
Production^d	53,567,360	110,429,480	-
Wyoming			
Establishments^b	30	3	-
Employment^c	4,314	224	-
Production^d	260,840,119	2,007,955	-

^a SOURCE: Mine Safety and Health Administration. Data are for 1995.

^b Mines or milling/processing plants. See Exhibit A, footnote b.

^c Employees at mines.

^d Short tons.

^e No production is shown for these mines; they may be misclassified.

^f Mill or processing plant; coal production (i.e., extraction) not associated with this facility.

SBREFA mandates use of the standard SBA definitions of “small” in regulatory flexibility analysis. This is not a very useful definition for small, since few mines or mining companies are large by the SBA definitions, and this definition of small washes out the disproportionately large impacts on truly small firms. Nevertheless, this is a statutory mandate. There is, of course, no reason why more than two size classes cannot be included in the analysis. Indeed, the analysis is improved by doing so. For coal mining, the SBA size cutoff is 500 employees, while the size cutoff used by MSHA is 20 employees. Accordingly, we will use the following size classes:

- Fewer than 20 employees;
- 20 to 49 employees;
- 50 to 99 employees;
- 100 to 499 employees; and
- 500 employees and over (described as “large”).

2. Size Profile of the Mining Industry

a. Establishments

Exhibit C shows the distribution of coal mining establishments and employment by industry and size class. Coal mines are predominantly small, but large mines dominate employment and production in the industry:

- Mines with fewer than 20 employees account for:
 - * 60 percent of coal mining establishments,
 - * 12 percent of coal mining employment, and
 - * 3 percent of coal production.
- Mines with at least 100 employees account for:
 - * 7 percent of coal mining establishments,
 - * 51 percent of coal mining employment, and
 - * 70 percent of coal production.

EXHIBIT C
ESTABLISHMENTS AND EMPLOYMENT IN COAL MINING,
BY ESTABLISHMENT SIZE^a

	Bituminous, Surface Mining	Bituminous, Underground Mining	Anthracite
Under 20 Employees			
Establishments^b	1,054	425	201
Employment^c	6,604	4,381	947
Production^d	24,165,769	1,627,224	2,532,986
20 to 49 Employees			
Establishments^b	316	367	16
Employment^c	9,967	11,385	499
Production^d	61,609,281	69,356,135	333,695
50 to 99 Employees			
Establishments^b	118	111	4
Employment^c	7,813	7,523	319
Production^d	66,672,609	55,722,199	801,635
100 to 499 Employees			
Establishments^b	93	106	-
Employment^c	19,198	25,230	-
Production^d	467,182,881	198,754,630	-
500 Employees and Over			
Establishments^b	2	9	-
Employment^c	1,115	5,242	-
Production^d	13,038,756	25,631,625	-

^a SOURCE: Mine Safety and Health Administration. Data are for 1995.

^b Mines or milling/processing plants. See Exhibit A, footnote b.

^c Employees at mines.

^d Short tons.

b. Companies

For purposes of regulatory impact analysis, the enterprise (the financial entity) is the relevant unit to use. Establishment data do not differentiate between one-establishment independent firms and subsidiaries of larger companies. For most industries, data on plants, employment, and output that are related to size are primarily collected by establishment, which poses a problem with the definition of “small.” Since MSHA is interested in the entity that is ultimately financially responsible for paying fines, however, the MSHA data include the controlling company. Thus the coal mine data can be aggregated by parent company as well as by mine.

Exhibit D shows coal mining companies, coal mine employment, and coal production by company size. To some extent, these data understate the dominance of large companies, since company size is measured solely by employment in SIC 1221, SIC 1222, and SIC 1231. Thus, for example, very large corporations, such as Union Pacific, are classified as “small” because only a handful of their employees work in the coal mining industry. Exhibit D ignores distinctions between underground mining and surface mining and between anthracite and bituminous coal, because one company may be engaged in more than one type of coal mining.

Not surprisingly, large coal producing companies dominate the coal mining employment and production to a greater degree than large coal mines do.

- Companies with fewer than 20 mining employees account for:
 - * 45 percent of companies engaged in coal mining,
 - * 3 percent of coal mining employment, and
 - * 1 percent of coal production.

- Companies with at least 100 coal mining employees account for:
 - * 15 percent of companies engaged in coal mining,
 - * 79 percent of coal mining employment, and
 - * 85 percent of coal production.

- Companies with at least 500 coal mining employees account for:
 - * 4 percent of companies engaged in coal mining,
 - * 60 percent of coal mining employment, and
 - * 69 percent of coal production.

**EXHIBIT D
COMPANIES, EMPLOYMENT, AND PRODUCTION
IN COAL MINING, BY COMPANY SIZE^a**

	Companies ^b	Employment ^c	Production ^d
Under 20 Employees	423	3,805	12,436,641
20 to 49 Employees	249	7,842	43,690,797
50 to 99 Employees	122	8,275	62,223,637
100 to 499 Employees	104	19,398	182,884,994
500 Employees and Over	35	59,356	689,072,473

^a SOURCE: Mine Safety and Health Administration. Data are for 1995.

^b Controlling parent company.

^c Employees in the coal mining industry.

^d Short tons.

D. BLACK LUNG INSURANCE

1. Insurance Coverage

The statutory requirement to “secure the payment” of benefits can be fulfilled in one of two ways:

- Most companies purchase black lung insurance as a rider to their workers’ compensation insurance policy.
- Companies that qualify may self-insure. Qualification requires:
 - * A net worth of at least \$10 million, and
 - * At least three years’ operating experience in the industry.

Self-insurance has a number of attractions. Self-insurers have the potential to save some administrative costs of insurance. Self-insurance gives a company complete discretion on how to handle any individual case. If a claimant also would receive disability benefits through a company retirement plan, for example, the company may opt for paying the black lung benefits rather than the retirement disability benefits, thus saving the costs of contesting the claim. With a stable (and unionized) work force, a self-insurer has the potential to capture benefits (in the form of reduced black lung claims) that may result from improved working conditions.

EXHIBIT E
IDENTIFIED SELF-INSURERS AND OTHER COAL MINING COMPANIES, BY COMPANY SIZE^a

	<u>Companies Identified as Self-Insurers^b</u>		<u>Other Coal Mining Companies</u>	
	<u>Companies^c</u>	<u>Employment^d</u>	<u>Companies^c</u>	<u>Employment^d</u>
Under 20 Employees	2	13	421	3,792
20 to 49 Employees	1	33	248	7,809
50 to 99 Employees	4	309	118	7,966
100 to 499 Employees	11	2,525	93	16,813
500 Employees and Over	20	30,029	15	29,327

^a SOURCE: Size data from the Mine Safety and Health Administration; data are for 1995. Self-insurance identification from Division of Coal Mine Workers' Compensation records.

^b Nearly half (37 of 75) self-insuring companies on the Division of Coal Mine Workers' Compensation list could not be matched with parent companies in MSHA data.

^c Controlling parent company.

^d Employees in the coal mining industry.

Many qualifying companies do self-insure. Exhibit E shows the self-insuring companies that could be matched with MSHA data by name -- nearly half could not be matched -- by the size of their coal mining operations. The self-insuring companies are predominantly quite large. Over half of the matched parent companies employ more than 500 coal miners. Many small coal mine operators are subsidiaries of companies that mine little coal in the United States; the parents of the two self-insurers with fewer than 20 employees, for example, are Union Pacific and a German multi-national corporation, Ruhrkohle International GMBH. Most of the self-insuring companies that could not be matched with MSHA data are also large. However, some are companies no longer active in the coal industry which continue to self-insure residual liabilities from their previous operations.

It is reasonable to infer that self-insuring companies have lower costs of complying with the existing regulations implementing the Black Lung Benefits Act -- and will probably incur smaller impacts from the proposed amendments to the regulations. How much smaller the impacts may be is not clear. Since self-insurance is not an option for coal mining companies that are small⁶ (at least by MSHA or similar definitions), the question is not critical to a regulatory flexibility analysis.

⁶ Firms with less than \$10 million in net worth that do not purchase insurance are not in compliance with the Act. Firms that are too small to pool their own risks are making a strategic decision not to insure. In effect, they are gambling that claims will be low enough not to bankrupt them, with the option of going out of business if they lose the gamble. If such a firm does go out of business, the cost of benefits will devolve on another responsible operator

2. Insurance Premium Rates

Exhibit F shows state and federal insurance premium rates for black lung disease. The rates in Exhibit F are for underground mines, and the data cover all of the states with substantial numbers of underground mines. Rates are quoted per \$100 of payroll. These data reflect a variety of rate-setting and reporting practices. Voluntary market data reflect rates that are set and/or prevail for private insurers in a state. Assigned risk pool data reflect rates charged to mine operators who must use this insurer of last resort. Data for some states are loss costs, rather than market rates. Some states (Ohio and Virginia) do not report federal black lung riders separately.

Black lung insurance rates for underground coal mines vary considerably by state and type of rate. Among the states:

- Market rates for bituminous coal range from \$3.00 per \$100 to \$4.96 per \$100;
- Market loss costs for bituminous coal range from \$0.56 per \$100 to \$4.10 per \$100;
- The loss cost for anthracite coal is \$5.38 per \$100; and
- Assigned risk pool rates for bituminous coal range from \$4.31 per \$100 to \$5.37 per \$100 (although they may be lower in Virginia).

or on the Trust Fund. Neither is an acceptable or fair option; the underlying failure to purchase insurance while being unable to pool risk internally is inherently a violation of the Act. Among other implications, expanding the self-insurance option to the smallest firms is not a viable regulatory alternative. Nor is it correct to consider costs of coming into compliance with existing statute and regulations an impact of a proposed amendment to those regulations.

EXHIBIT F
STATE AND FEDERAL UNDERGROUND MINE PREMIUM RATES FOR
BLACK LUNG DISEASE, BY MAJOR COAL PRODUCING STATE^a

State	Market	Premium Rates per \$100 of Payroll		Effective Date
		State	Federal	
Alabama	Voluntary Market	\$5.04	\$3.19	1/1/96
	Assigned Risk	\$8.50	\$5.37	1/1/96
Colorado	Voluntary Market	\$2.70	\$3.98	12/1/95
Illinois	Voluntary Market ^b	\$9.40	\$3.95	1/1/96
	Assigned Risk	\$11.28	\$4.74	1/1/96
Indiana	Voluntary ^c & Assigned	\$1.90	\$4.96	1/1/96
Kentucky	Assigned Risk	\$4.73	\$3.74	6/22/88
Ohio	^d	\$17.56	^d	7/1/94
Pennsylvania	Bituminous Coal ^f	\$6.45 ^e	\$0.56 ^e	10/29/93
	Anthracite Coal ^f	\$16.86 ^e	\$5.38 ^e	10/29/93
Tennessee	Voluntary & Assigned	\$7.34	\$4.31	7/1/95
Utah	Voluntary Market	\$1.79	\$4.79	1/1/96
Virginia	Voluntary Market	\$2.65 ^f	\$1.24 ^f	^f
	Assigned Risk	\$4.39 ^f	\$1.24 ^f	^f
West Virginia		\$29.71	\$3.00	7/1/93

^a SOURCE: National Council on Compensation Insurance and the states of Ohio, Pennsylvania, and West Virginia.

^b Advisory rate. Advisory loss cost is \$6.12 for state and \$3.48 for federal.

^c Advisory rate. Advisory loss cost is \$1.58 for state and \$4.10 for federal.

^d Represents the total premium for trauma and disease; no further breakdown is available.

^e Represents the loss cost only. Aggregate loss cost adjustments are factored into rate by the individual insurance companies.

^f Quoted state rate is total rate, effective 1/1/96, for which no state/federal breakdown is available. Quoted federal rate is the rate effective 10/1/82, when the state rate was \$15.50.

Black lung insurance rates for underground bituminous coal mining have the following averages:

- Market rates for these states average \$3.67 (unweighted) or \$3.29 (weighted by underground mine employment for 1995).
- Market loss costs average \$2.71 per \$100 (unweighted) or \$1.95 per \$100 (weighted).
- Assigned risk pool rates average \$4.62 per \$100 (unweighted) or \$4.27 per \$100 (weighted).

These data do not include insurance rates for surface mining. Surface coal mines have substantially lower overall dust exposures than underground coal mines. Accordingly, the rates are lower. In West Virginia, for example, the federal black lung insurance rate is \$1.00 per \$100 for surface coal mines, compared with \$3.00 per \$100 for underground coal mines.

E. LABOR INTENSIVENESS

Insurance premiums are computed as a percent of payroll. The relationship between payroll and revenue is thus an important factor in the significance of the impacts. Two factors need to be addressed:

- The proportion of payroll on which total premiums are based; and
- The fraction of total costs represented by payroll.

Both of these are aspects of the labor intensiveness of coal mining.

1. The Production Work Force

Not all employees of a coal mining company are covered by the Black Lung Benefits Act. In particular, office workers are not engaged, and workers at independent shops and yards (who maintain equipment) may not be engaged, in actions that come under the Black Lung Benefits Act. Thus these workers should be removed from the payroll upon which insurance costs are calculated. MSHA data indicate that employees in these two types of subunits constitute:

- 8.1 percent of employees in surface bituminous mining;
- 3.3 percent of employees in underground bituminous mining; and
- 9.0 percent of employees in anthracite mining.

We will assume that the payroll costs should be reduced by the same percentages for estimation of insurance costs.

2. The Capital/Labor Ratio

Highly mechanized (i.e. capital-intensive) operations, which substitute machines for workers, have relatively low payroll costs. This issue arises in several contexts:

- Surface mining, particularly in the western United States, is generally more mechanized than underground mining.
- For underground mining, long wall mining technology is far more mechanized than older manual techniques, such as continuous miner technology.
- Contract miners -- mining companies that extract and process coal under contract to other companies -- typically have very low investments in equipment (or mines) and thus are comparatively labor-intensive.

The implication of these factors is that underground mines using older techniques and contract miners are expected to incur higher compliance costs and impacts than other coal mines.

Surface bituminous coal mining, underground bituminous coal mining, and anthracite coal mining are different SIC industries, so that data are available for these differences. While the use of contract miners is a well-known phenomenon, data are not available on the extent of their use or on the share of value of shipments that is represented by payroll. Partial data are available for the use of long wall mining, as compared with other underground coal mining techniques, but these data do not include the labor intensiveness of the techniques.

Exhibit G shows the use of conventional, continuous miner, and long wall mining techniques in 941 underground mines, by size of mine and size of mining company. Exhibit G is based on MSHA inspection data that show the job classifications of miners for whom air samples were taken. Mining techniques were identified through job classifications that are unique to each mining technique. Exhibit G shows an extremely strong relationship between size of mine or company and mining technique used:

- Conventional mining is used almost exclusively in very small mines and by very small mining companies:
 - * Of the mines using conventional mining:
 - 73 percent have fewer than 20 employees, and
 - 94 percent have fewer than 50 employees.
 - * Of the mining companies using conventional mining:
 - 70 percent have fewer than 20 employees, and
 - 93 percent have fewer than 50 employees.
- Continuous miner techniques are used principally in small mines and by small mining companies:

EXHIBIT G
MINING TECHNIQUES USED
BY SIZE OF MINE AND MINING COMPANY^a

Size	Conventional		Continuous Miner		Long Wall	
	Number	Percent	Number	Percent	Number	Percent
INDIVIDUAL MINES						
Under 20 Employees	116	73.0%	254	31.9%	-	-
20 to 49 Employees	34	21.4%	319	40.0%	2	2.9%
50 to 99 Employees	2	1.2%	106	13.3%	3	4.3%
100 to 499 Employees	7	4.4%	108	13.6%	47	67.1%
500 Employees & Over	-	-	10	1.2%	18	25.7%
TOTAL	797	100.0%	159	100.0%	70	100.0%
MINING COMPANIES						
Under 20 Employees	96	70.1%	123	31.6%	-	-
20 to 49 Employees	31	22.6%	130	33.4%	1	3.8%
50 to 99 Employees	6	4.4%	62	15.9%	-	-
100 to 499 Employees	3	2.2%	52	13.4%	13	50.0%
500 Employees & Over	1	0.7%	22	5.7%	12	46.2%

^a SOURCE: MSHA 1995 inspection data on worker classifications sampled. The sampling data cover 941 underground mines, of which three use all three techniques and 81 use various combinations of two techniques.

- * Of the mines using continuous miner techniques:
 - 32 percent have fewer than 20 employees, and
 - 85 percent have fewer than 100 employees.
- * Of the mining companies using continuous miner techniques:
 - 32 percent have fewer than 20 employees, and
 - 81 percent have fewer than 100 employees.
- Long wall mining is used almost exclusively in relatively large mines and by relatively large mining companies:
 - * Of the mines using long wall mining, 93 percent have 100 or more employees.
 - * Of the mining companies using long wall mining, 96 percent have 100 or more mining employees.

3. Estimated Relationships Between Payroll and Value of Shipments

The value of shipments for the coal industry in 1995 was \$19,389 million.⁷ The MSHA data show production in the three industries (See exhibit A), and we will assume that the value of shipments was divided among the three industries in the same proportion of output.⁸ Industry data on annual payroll⁹ can then be compared to the value of shipments estimates. This comparison indicates that in 1995 payroll was:

- 15.6 percent of value of shipments for surface bituminous coal mining;
- 32.0 percent of value of shipments for underground bituminous coal mining; and
- 49.4 percent of value of shipments for anthracite coal mining.

The resulting estimate for payroll, adjusted for non-exposed workers, that is the base for potential regulatory impacts on insurance premiums are:

- 14.3 percent of value of shipments for surface bituminous coal mining;
- 30.8 percent of value of shipments for underground bituminous coal mining; and
- 45.0 percent of value of shipments for anthracite coal mining.

These estimates will be used below in the computation of increased insurance costs due to the proposed regulation as a percentage of revenue.

⁷ U.S. Department of Commerce, U.S. Industry and Trade Outlook 1998, p. 2-2.

⁸ This assumption understates the value of shipments for relatively valuable anthracite coal, which will bias the estimate of impacts on the anthracite coal industry somewhat upward.

⁹ U.S. Department of Commerce, County Business Patterns, Table 1b, "United States -- Establishments, Employees, and Payroll, by Industry and Employment-Size Class: 1995."

F. THE MARKET FOR COAL

1. Overall Trends and Projections

Exhibit H¹⁰ shows coal industry output, employment, and productivity since 1983.¹¹ Total production rose through the 1980s, fell in 1991, and since 1993 has resumed a more modest upward trend. The recession of 1991 and a coal miners' strike in 1993 are principally responsible for the pause in growth in the early 1990s. The U.S. Department of Commerce projects a modest increase in demand for coal of one percent per year over the next several years.¹²

Within these trends, there have been several important shifts, which are reflected in the data of Exhibit H. Production of western low-sulfur coal has expanded substantially, principally at the expense of high-sulfur coal produced in several eastern basins. Environmental concerns and regulations have encouraged this shift in production, but high transportation costs from western mines to eastern markets have somewhat constrained the shift. Since western coal is mined mostly in large-scale surface mines, while much eastern coal is mined underground, this shift is reflected in an expansion of surface mine production at the expense of underground mine production.

The coal industry has achieved large increases in productivity, which are also reflected in Exhibit H. In underground mines, increased productivity has been achieved by the adoption of highly mechanized long-wall mining techniques utilizing equipment that cuts coal from large faces of coal deposits, conveyors that remove the coal, and movable hydraulic roof supports that collapse the roof evenly once mining from an area is complete. In surface mining, increased productivity has been achieved by methods such as using larger dump hauls and larger draglines that are made of improved metals. These productivity gains have required very high capital costs for the massive equipment that is required, and they have resulted in sharp declines in demand for the labor of coal miners.

Coal prices have fallen during the 1990s. In part, this is a result of the mechanization of the industry, which has reduced the cost of mining coal. Increases in productivity also have led to excess capacity in the coal industry, which has tended to depress coal prices. In addition, prices of oil and gas have fallen over this period, which provides further competitive pressure on the price of coal.

¹⁰ Exhibit H and Exhibit I use published MSHA statistics, which measure producing mines (but not milling/preparation plants, to which MSHA does not attribute "production" so as not to double count). Establishments, in contrast to previous exhibits, count each mining subunit. Employment is appropriate to these definitions of mining establishments.

¹¹ Data prior to 1983 are aggregated differently and thus are not comparable.

¹² U.S. Department of Commerce, U.S. Industry and Trade Outlook 1998, p. 2-1.

EXHIBIT H
MINES, PRODUCTION, EMPLOYMENT, AND PRODUCTIVITY
IN THE COAL INDUSTRY^a

	1983	1985	1990	1991	1992	1993	1994	1995	1996
Underground Mines									
Mines	2,173	2,103	1,777	1,605	1,455	1,323	1,256	1,081	981
Production^b	292.1	343.6	419.0	404.3	406.9	348.4	396.6	396.1	410.6
Employment^c	101.5	96.9	82.4	76.4	72.0	64.1	65.4	59.8	56.9
Productivity^d	2,878	3,546	5,085	5,292	5,651	5,435	6,064	6,624	7,216
Surface Mines									
Mines	2,362	2,249	1,782	1,693	1,543	1,429	1,372	1,275	1,152
Production^b	470.2	519.6	599.4	583.5	585.5	594.9	625.1	635.9	654.8
Employment^c	64.4	63.7	56.6	53.4	52.2	50.4	50.6	46.6	45.4
Productivity^d	7,301	8,157	10,590	10,927	11,216	11,804	12,354	13,646	14,360
All Mines									
Mines	4,535	4,352	3,559	3,298	2,998	2,752	2,628	2,356	2,133
Production^b	762.3	863.2	1,019	987.8	989.4	943.3	1,032	1,032	1,065
Employment^c	165.9	164.7	139.0	129.8	124.2	114.5	115.9	106.5	102.5
Productivity^d	4,595	5,241	7,331	7,610	7,966	8,238	8,904	9,690	10,390

^a SOURCE: Mine Safety and Health Administration statistics. Data exclude separate milling/preparation plants, to which MSHA assigns no production so as not to double-count.

^b Millions of short tons.

^c Thousands of miners.

^d Short tons per miner.

The coal industry is increasingly highly concentrated. In 1995, 4 companies accounted for 33 percent of production, 12 companies accounted for 56 percent of production, and 20 companies accounted for 67 percent of production. There have been a number of consolidations, and decreasing margins between sales price and production costs have forced some smaller, less profitable companies to exit the industry. As is shown in Exhibit H, the number of operating mines fell by half between 1985 and 1996 -- more than half for underground mines and almost half for surface mines. Nevertheless, the factors cited above have ensured that vigorous competition remains in the coal industry.

2. Demand for Bituminous Coal

a. Coal for Electricity Generation

Approximately 90 percent of domestic demand for coal comes from electricity generation, principally electric utilities. Coal provides the fuel for generation of about half of the nation's electricity, and this share has remained relatively stable for several decades. The energy crisis of the 1970s and early 1980s, with its high oil and gas prices and concern about security of supplies, led electric utilities to expand coal-fired generating capacity during that era. In the current environment of deregulation, smaller and more flexible generating capacity using other fuels -- particularly gas -- are becoming far more attractive. Because it is so long-lived, however, installed coal-fired generating capacity will ensure coal a reasonably stable market share for decades. Environmental concerns are not expected to dampen the growth of demand for coal in the near term or intermediate term.

Demand for coal used in electricity generation is projected to grow by about one percent per year over the next five years. This growth in demand for electricity generation is expected to account for essentially all of the net growth of coal output over this time period.

b. Metallurgical Coal and Steam Coal

The remaining 10 percent of domestic demand for coal comes from industry. Industrial uses include consumption of metallurgical coal in coking plants and steam coal in other industrial plants. Together, these two uses have remained a fairly constant share of demand for coal, although the mix of these uses has shifted.

Coking coal was the predominant non-electric use of coal prior to 1980. Since then, however, demand for coking coal has fallen sharply due to changes in the steel industry. These changes have included reduced demand for steel as other metals were substituted for it, changes in production techniques (particularly use of mini-mills that recycle scrap and do not use coking coal), and increased foreign competition in steel.

Industrial steam is needed in heavy industries such as cement, paper, and chemicals. Coal penetrated these markets in the 1980s, when it had a significant cost advantage over other fuels. Since these industries are mature and slow growing, there has not been growth in demand for steam coal since 1992, and little is expected in the future.

c. International Trade

The U.S. exports less than 10 percent of its coal output, although it is the second largest coal exporter in the world economy. In the world market, U.S. coal is used as good-quality steam coal and premium metallurgical coal. Metallurgical coal plays a larger role than steam coal in U.S. exports. U.S. coal is relatively expensive, due to transportation costs from mine to port and the relatively high cost of mining eastern coal. Thus the U.S. coal industry often serves as a swing producer in world markets, filling in when there is a short supply in particular markets.

The volume of U.S. coal exports decreased somewhat in the early 1990s. The principal

factors were de-emphasis on coal consumption in Europe, economic weakness in some trading partners, and increasing competition from foreign producers. Exports recovered in 1995.

The U.S. imports less than one percent of its domestic coal consumption. Although the amount is increasing, coal imports are too small for foreign competition to be a significant factor for the proposed regulation.

3. Demand for Anthracite Coal

Anthracite coal, or “hard coal,” is naturally very high in carbon (84 to 88 percent), with a sulfur content typically less than seven percent and volatile matter of about 5 percent. Anthracite coal is mined and prepared exclusively in a five-county region in northeastern Pennsylvania. Anthracite typically is located deeper beneath the surface and is found in more steeply upturned veins than bituminous coal. Nearly all Anthracite mining now being done is actually re-mining of coal left behind in previously mined areas.

Anthracite coal is the cleanest burning commercially available solid fuel. Its principal uses include heating and co-generation of electricity, industrial carbon used in high-carbon products, and water filtration media. The relatively high cost of Anthracite tends to reduce it to specialty markets where its high quality is valued. Cogeneration is viable in part because the coal is burned near the mine (which saves transportation costs), and in part because energy legislation dating from the 1970s guarantees a market for the electricity that is produced.

Exhibit I shows Anthracite industry output, employment, and productivity since 1983. Except for culm bank operations, the Anthracite industry has been in sharp decline. The number of underground mines has decreased by half and underground employment has fallen by more than half since 1983. The number of strip mines has fallen by 30 percent (there are also a couple of dredging operations), and employment has fallen by half over the same period. These rates of decline are similar to those for bituminous coal.

Production in underground and strip mines has fallen by nearly 25 percent since 1983. This contrasts sharply with the substantial increase in bituminous coal production during the 1980s and current modest growth of about one percent per year. Productivity in underground Anthracite mines has nearly doubled since 1983, and productivity in Anthracite strip mines has increased by about 50 percent. This is substantially lower than productivity growth in bituminous mines, and it appears to be entirely due to abandonment of less efficient mines. Anthracite does not lend itself to massive equipment or efficient technologies such as long-wall mining.

Culm bank operations, which recover Anthracite on the surface for use in cogeneration plants, present a contrasting picture of expansion. Since 1983, the number of mines has increased by half, employment has increased by about 60 percent, production has increased by nearly 150 percent, and productivity has increased by about 40 percent. Culm bank operations now account for about half of all Anthracite production, which reflects the dominance of cogeneration in the demand for Anthracite.



EXHIBIT I
MINES, PRODUCTION, EMPLOYMENT, AND PRODUCTIVITY
IN THE ANTHRACITE COAL INDUSTRY^a

	1983	1985	1990	1991	1992	1993	1994	1995	1996
Underground Mines									
Mines	88	88	76	77	73	59	56	53	44
Production^b	0.422	0.626	0.416	0.323	0.370	0.400	0.322	0.415	0.387
Employment^c	574	589	416	388	364	297	280	267	246
Productivity^d	735	1,063	1,000	832	1,016	1,347	1,150	1,554	1,573
Culm Bank Operations									
Mines	32	35	37	46	40	44	49	47	47
Production^b	0.971	1.026	0.893	1.253	1.462	2.160	2,137	2.043	2.391
Employment^c	184	187	250	273	309	372	301	327	319
Productivity^d	5,277	5,487	3,572	4,590	4,731	5,806	7,010	6,248	7,270
Other Surface Mines									
Mines	95	88	80	76	68	68	68	66	66
Production^b	2.442	2.113	1.862	1.827	1.817	1.654	1.813	1.872	1.839
Employment^c	1,145	932	699	670	629	557	602	524	575
Productivity^d	2,133	2,267	2,664	2,727	2,889	2,969	3,012	3,573	3,198
All Mines									
Mines	215	211	193	199	181	171	173	166	157
Production^b	3.835	3.765	3.170	3.404	3.649	4.215	4.273	4.330	4.617
Employment^c	1,903	1,708	1,365	1,331	1,302	1,226	1,183	1,118	1,140
Productivity^d	2,015	2,204	2,322	2,557	2,803	3,438	3,612	3,973	4,050

^a SOURCE: Mine Safety and Health Administration statistics. Data exclude separate milling/preparation plants, to which MSHA assigns no production so as not to double-count.

^b Millions of short tons.

^c Miners.

^d Short tons per miner.

III. REGULATORY COSTS

A. QUALITATIVE ASSESSMENT OF COSTS

The proposed regulatory amendments involve a number of provisions with different types of costs and mechanisms for causing impacts. It is useful to review the major proposed changes and qualitatively assess their nature and potential for increasing compliance costs.

1. Sources of Costs of the Proposed Amendments

a. Evidentiary Development

The proposed regulations contain a limitation on the amount of documentary medical evidence parties may submit. The two sides (the designated responsible coal mine operator or the Director and the claimant) are each limited in their affirmative presentations to two medical reports, two pulmonary function study tests, two blood gas study tests, and two chest x-ray interpretations. Documentary rebuttal evidence is limited to one interpretive opinion with respect to each part of the pulmonary evaluation submitted by a party's opponent. This proposal is designed to make quality of evidence more important than quantity and to level the playing field with respect to the greater economic resources that coal mine operators and insurance carriers can bring to bear when compared to those available to individual claimants.

As a practical matter, it is difficult to see how this change could be expected to increase the administrative cost of contesting a given claim. Although the provision might encourage coal mine operators to obtain the services of more highly qualified (and more expensive) experts, it will prevent them from incurring the cost of more than two evaluations. Nor does it appear reasonable to expect that it will lead to more non-meritorious claims being approved. One hypothesis is that valid claims are being overwhelmed by sheer quantity of evidence; another is that this prospect dissuades miners from filing strong claims. If either of these hypotheses is true, the number of approvals of *valid* claims can be expected to increase. Yet coal mine operators and insurance carriers still hold the advantage in resources and access to quality of expertise.

It is, on the other hand, quite probable that this provision will be seen by potential claimants as improving chances of prevailing in a claim. Consequently, the number of claims filed can be expected to increase. As far as weak claims are concerned, however, such an increase in filings can be sustained only if it turns out that weak or invalid claims are being approved in greater numbers. Since there is nothing in the provision to suggest that this will occur, the anticipated upsurge in filings can be expected to disappear as potential claimants adjust their heightened expectations down to reality. Thus any increase in filings should be transitory.

b. Identification of Responsible Operators

The proposed regulations provide for designation of one or more "potentially liable operators" and (from among that group) a "designated responsible operator." If an operator (or its insurance carrier) wishes to contest its designation as a potentially liable operator or

responsible operator, it must do so at this preliminary stage. The proposed regulations also impose on all of the potentially liable operators *collectively* the evidentiary limitations described above. While this does not entirely prevent any potentially liable operators who are in the queue (so to speak) from defending against the claim,¹³ it severely restricts their scope to do so.

This proposed change can be expected to result in an increase in awards for weak or non-meritorious claims only to the extent that the responsible operator fails to mount an adequate defense. While coal mine operators may be understandably nervous at potential dependency on someone else's defense, there is no clear reason to expect that -- in the aggregate -- the quality of defense will deteriorate. This is especially true in view of the fact that insurance carriers do the bulk of defending against claims, and in such cases it makes little difference who the *named* responsible operator is. If a coal mine operator defends poorly, he probably would have defended just as poorly, and with the same result, in another case under the current regulations, although the party that paid might be different.

As in the case of the proposed regulations on evidentiary development, the rate of filing of claims can be expected to rise as a result of heightened expectations of an increased approval rate. For reasons similar to those for evidentiary development, these expectations will largely be disappointed. As a result, any increase in filing of claims will be transitory.

The proposed regulation will also increase the number of claims for which an operator will want to document that it is not a potentially liable operator or the responsible operator. Under the existing rules, an operator could wait until after the initial decision, when the issue would be moot for all denials that were not appealed. In most cases, however, this burden appears to be minimal. (See the results of the Briscoe survey quoted in B.2.c. below.) As part of the initial procedures, a claimant provides a work history and the District Director may provide some corroboration through consulting Social Security Administration records. The mine operator need only consult its own personnel records to confirm this information. In cases where the mine operator is no longer in business and personnel records are thus not available, contesting a designation will be significantly more difficult. If the next potentially liable operator is insured by the same carrier, however, there is no point in contesting a designation, because the same carrier will be responsible for payment of benefits for either operator. The extent and costs of the difficult cases is not clear, although it is clear that these costs will be born by the insurance carriers.

c. Civil Money Penalty

The proposed regulations contain new provisions implementing the Act's civil money penalty provision, which directs the assessment of a penalty of up to \$1,000 per day against operators that fail to secure the payment of benefits. The proposed regulations establish criteria and streamlined procedures; provide notice of the Department's intention; and provide a graduated series of possible penalties based on the operator's size, its prior notice of the Act's insurance requirements, and the operator's action (or inaction) following this notice.

This proposed provision will doubtless result in certain operators' incurring costs. Yet

¹³ They may assist in a responsible operator's defense of a claim, for example, or conduct their own tests after a showing that the responsible operator has failed to undertake a full development of the evidence.

these costs are a direct result of non-compliance with the basic statutory requirements and are tailored to bring the operator into compliance. Costs of being out of compliance with an existing statute and existing regulations are not legitimately attributable to a proposed regulation.

d. Treating Physicians' Opinions

The proposed regulations would give certain treating physicians' opinions controlling weight in determining whether the miner is totally disabled or died due to pneumoconiosis. Such controlling weight could be given only after considering:

- The nature of the relationship between the miner and the physician, specifically whether the physician has treated the miner for respiratory or pulmonary conditions;
- The duration of the treatment relationship between the miner and the physician;
- The frequency of the physician's treatment;
- The extent of the physician's treatment, particularly the types of testing and examinations;
- The credibility of the physician's opinion in light of its reasoning and documentation, other relevant evidence, and the record as a whole.

This provision is designed to adjust the balance between the sheer weight and length of the resume of an expert who does not know the claimant and a qualified physician who is directly familiar with the case. The proposed criteria are closely parallel to a similar regulation used by the Social Security Administration, and they generally summarize the factors listed in existing appellate case law for determining the weight to be given to medical opinions.

It is difficult to see how this provision would lead to an increase in approval of weak or non-meritorious claims. It does not give controlling weight to the opinion of a local physician who hardly knows and has rarely treated a claimant; who offers a poorly reasoned and undocumented opinion; and/or who is not competent to render an opinion in the first place. Quite the contrary, the factors to be considered in assigning the weight offer grounds for challenging the unsupported opinion of an unqualified doctor. Any increase in approvals that may result from this provision can be expected to consist of valid claims that would otherwise have been disapproved.

Like other proposed provisions, this one can be expected to produce an increase in the rate of filing of claims as a result of heightened expectations by miners about the chances of claims being approved. As with the other provisions, any such surge in filing of claims can be expected to be transitory.

e. Waiver of Overpayments

The proposed regulations would make available to all overpaid claimants the provisions

governing waiver of recovery of an overpayment incorporated from the Social Security Act. These provisions entitle a claimant, who was not “at fault” in creating an overpayment, to waiver of the recovery of the overpayment if he can demonstrate that permitting recovery would “defeat the purpose of the Act” or “be against equity and good conscience.” Currently these provisions apply only to a claimant who receives an overpayment from the Black Lung Disability Trust Fund.

To the extent that an overpayment was made and a claimant can meet the two-part test to qualify for the waiver, this provision apparently imposes costs on coal mine operators and insurance carriers. Closer inspection of the circumstances for meeting the qualifying test, however, reveals that there would be little (if any) incremental cost in practice. To “defeat the purposes of the Act” essentially means that the claimants are unable to pay, so that the operator would not be able to recover any overpayment even if it were entitled to. Moreover, the Department is not aware that operators currently collect a significant percentage of overpayment amounts that they pay, so that imposition of the test for waiver will not significantly alter the current rate of recovery.

f. Definition of Pneumoconiosis

The proposed regulations make explicit in the regulatory text two aspects of the definition of pneumoconiosis that have been implicit and thus have been the subject of contention and litigation. One aspect has to do with the broad legal definition of pneumoconiosis, as opposed to a narrow clinical definition. The other issue is the explicit inclusion of obstructive, as well as restrictive, pulmonary disease as a possible category of pneumoconiosis.

Legal Pneumoconiosis. For purposes of the black lung benefits program, the definition of pneumoconiosis is quite broad. The medical community, on the other hand, confines the definition of “coal workers’ pneumoconiosis” to the pathologic reaction of lung tissue to dust inhalation, which is diagnosed by the resulting characteristic patterns or markings on chest X-rays. There is no question that the Black Lung Benefits Act recognizes a far broader concept of the disease than does the medical community. The statutory language is quite clear on this point:

The term “pneumoconiosis” means a chronic dust disease of the lung and its sequelae, including respiratory and pulmonary impairments, arising out of coal mine employment.¹⁴

The proposed regulations seek to eliminate any further confusion by explicitly acknowledging that the medical and legal definitions are distinct.

This provision simply clarifies the regulations by making them explicitly consistent with the statute. Since no change in requirements is involved, any related costs are not incremental costs associated with the regulation.

Obstructive Pulmonary Disease. The proposed regulations explicitly define

¹⁴ 30 U.S.C. 902(b).

pneumoconiosis as “any chronic restrictive or obstructive pulmonary disease” arising out of coal mine employment. This explicit inclusion of obstructive pulmonary disease was intended to foreclose litigation attempting to narrow the definition with medical opinions that categorically exclude obstructive lung disorders from occupationally-related pathologies. The proposed rule is consistent with case law. The court of appeals for the 4th circuit has ruled that occupational dust exposure could not be ruled out as a possible cause of chronic obstructive lung disease. The court of appeals for the 7th circuit left the issue of occupational dust exposure and chronic obstructive lung disease to be answered by “the facts and medical opinions in each specific case.”

The proposed regulation codifies the decision of the 4th circuit that obstructive pulmonary disease cannot categorically be excluded from the definition of pneumoconiosis. The issue is essentially one of medical opinion. For questions of medical criteria, such as this, the Black Lung Benefits Act provides a clear directive:

The Secretary of Labor, in consultation with the Director of the National Institute for Occupational Safety and Health, shall establish criteria for all appropriate medical tests under this subsection which accurately reflect total disability in coal miners [due to pneumoconiosis] as defined in subparagraph (A).¹⁵

The Department of Labor duly consulted NIOSH. The NIOSH study on occupational dust exposure, which included a review of all other available studies, contains ample medical authority suggesting at least some relationship between coal mine dust exposure and the development of chronic obstructive lung disease.¹⁶ NIOSH has since confirmed its opinion twice, in comments on the January 22, 1997 proposed rule¹⁷ and in response to industry comments on the proposal.¹⁸

The Department has followed the statutorily mandated procedure for resolving the medical question of whether obstructive lung disorders can categorically be excluded from the definition of pneumoconiosis. This procedure has provided a clear answer that such exclusion is not correct. Thus the proposed regulatory language merely clarifies existing law; it does not make changes. Accordingly, any related costs are not incremental costs attributable to the proposed regulation.

g. Establishing Total Disability and Total Disability Due to Pneumoconiosis

The proposed regulations amend the definition of “total disability.” Under the proposed definition, a finding of “total disability” requires:

¹⁵ 30 U.S.C. 902(f)(1)(B).

¹⁶ NIOSH, “Occupational Exposure to Respirable Coal Mine Dust,” 1995.

¹⁷ Exhibit 5-173.

¹⁸ Letter from Dr. Paul A. Schultz, Director of the NIOSH Education and Information Division, to Mr. T. Michael Kerr, December 8, 1998.

- A respiratory or pulmonary impairment, which -- standing alone -- prevents a miner from performing his usual coal mine employment, regardless of a concurrent disabling nonrespiratory or nonpulmonary condition; and
- A showing that pneumoconiosis is a substantially contributing cause of the totally disabling respiratory or pulmonary impairment.

This proposed definition is consistent with the Department's long-held position with regard to establishing total disability due to pneumoconiosis.

The issue of the definition of "total disability" has been the subject of much litigation (which has led to the courts of appeals decisions). In circuits where the proposed definition is the prevailing case law, any increase in approvals due to this definition cannot be attributed to the proposed regulation. In circuits whose appeals court has not yet rendered a decision, the issue of regulatory costs is more debatable. The elements of these proposed provisions show a range of judicial outcomes:

- The requirement of a showing that pneumoconiosis is a substantially contributing cause of the totally disabling respiratory or pulmonary impairment reflects the decisions of the courts of appeals in the 3rd, 4th, 6th, 7th, 10th, and 11th circuits. These have jurisdiction over more than 90 percent of cases arising out of claims. Thus it is quite reasonable to conclude that the proposed regulation codifies settled law, and that any associated costs of compliance are not incremental costs attributed to the proposed regulation.
- The requirement that a respiratory or pulmonary impairment -- standing alone -- prevents a miner from performing his usual coal mine employment reflects the decisions in the only two circuits where the court of appeals has ruled. There is no particular reason not to consider this point settled law, presuming that other circuits will look to the two for precedents or otherwise agree with their reasoning. Yet the grounds for considering the provision to be current law are far less compelling.
- The issue of disregarding a concurrent disabling nonrespiratory or nonpulmonary condition has been heard by appeals courts in two circuits, and they have produced conflicting rulings. In this instance, the proposed regulation represents a change except in the circuit that has already upheld it. For purposes of this regulatory flexibility analysis, we will assume that (except in this one circuit) any costs associated with an increase in approvals is attributable to the proposed regulation.

This provision can also be predicted to cause an expectations-driven increase in filings. For the most part, this surge can be expected to be transitory. Only to the extent that expectations of an increase in the approval rate are realized can this increase be sustained. Even then, costs of the remaining increase in filings (after the initial surge has subsided) can be attributed to the proposed regulation only to the extent that court decisions have not already made the provisions the prevailing law.

h. Additional or Subsequent Claims

The proposed regulations clarify claimants' right to file claims more than one year after denial of a previous claim; in particular, they clarify the claimant's burden of proof to obtain full consideration of a refiled claim. Under the proposal, such "additional" or "subsequent" claims must be considered if the claimant demonstrates that a change in one of the applicable conditions of entitlement (i.e., those conditions upon which the prior denial was based) has occurred since the date upon which the order denying the prior claim became final. This proposal is based on the premise that pneumoconiosis is a progressive condition that can worsen well after exposure to coal dust has ceased. The proposed change codifies the decisions of courts of appeals in the 3rd, 4th, 6th, 7th, and 8th circuits.

This proposal entails the same legal issues as the previous proposal. The position that it is prevailing law is almost as strong in that appeals courts in five circuits have upheld it, although the 10th circuit has ruled against the provision. Nevertheless, it appears reasonable to conclude that the proposed regulation codifies settled law, and that associated costs of compliance are not incremental costs attributed to the proposed regulation.

In practice, some increases in filings and approvals can be expected. The increases in approvals are likely to be quite small, however, since the proposal represents at most a minor adjustment in the right to full consideration of a refiled claim. Also, the claimant has the burden of proving that a condition of entitlement has changed. Even then, this showing guarantees full consideration only of the subsequent claim, with any award of benefits payable only from the date of its filing forward. The previous decision remains binding as to earlier time periods. The previous decision *may* still be considered in the current decision, however, and the claimant must make the case that the change was substantial enough¹⁹ to obtain an award.

Some increase in refilings can also be expected to occur. As with other provisions, this surge will be largely transitory.

i. Medical Benefits

The proposed regulations provide that, in any claim for compensation for treatment of a pulmonary disorder filed by a miner entitled to medical benefits, there shall be a rebuttable presumption that the treatment was for a disorder caused or aggravated by pneumoconiosis. In effect, this provision shifts the burden of proof: Instead of the claimant being required to prove that a treated pulmonary disorder is related to coal dust exposure, the mine operator or insurance carrier will be required to prove that the disorder is not related to coal dust exposure. The proposed regulation also provides that evidence that challenges the miner's underlying entitlement to medical benefits is insufficient to demonstrate that the specific treatment for which compensation is claimed is not compensable.

To understand the force of this proposal, it is helpful to play out a scenario under the current regulations. A miner who receives medical treatment for a pulmonary disorder files a claim for medical benefits (i.e., payment of the bill). The insurance carrier routinely denies the claim on the grounds that the problem was not related to pneumoconiosis. It is then up to the miner to prove that the treated disorder was caused or aggravated by pneumoconiosis. This can

¹⁹ Ironically, it would strengthen the claimant's argument that a condition has changed to undercut earlier arguments by downplaying the seriousness of the condition at the time the previous claim was denied.

be done as simply as obtaining a letter to that effect from the treating physician. If the insurance carrier wishes to challenge the claim, it must develop superior evidence that the treatment was not related to pneumoconiosis.

Under this scenario, the proposed regulation replaces the physician's letter with a presumption that the treatment was for a disorder caused or aggravated by pneumoconiosis. The insurance carrier (or operator) may still rebut the presumption. Indeed, in cases where a miner seeks a hearing on a refusal to pay a medical claim the means of rebutting a presumption will be no more expensive than the means of rebutting the physician's letter.

This provision will increase costs of medical compensation to some extent. Under current regulations, miners with valid claims for medical benefits who do not obtain a physician's letter or otherwise support the claim for medical benefits do not receive benefits. In such cases, additional medical benefits will be paid under the proposed regulations. Insurance carriers may also choose to pay questionable claims for medical benefits if the amounts are small enough that it is not cost-effective to challenge them. Additional payments due to this strategic decision, however, will be self-limiting in size.

The provision is not likely to increase costs of medical compensation for mine operators that self-insure. Such mine operators have a more wholistic perspective on medical costs, since they are likely to have to pay them through a medical plan if they do not pay them as black lung benefits through workers' compensation. Either way, the benefits will be covered -- and would have been covered in the absence of the proposed regulation.

This proposal should not lead to any significant increase in filings or award of disability benefits.

j. Fees

The proposed regulations make two minor amendments of the allocation of fees. One amendment concerns attorney's fees. The other concerns witness fees.

Attorney's Fees. The proposed regulation extends the coal mine operator's or insurance carrier's liability for claimant's attorneys fees back to the beginning of the procedure. Under current regulations, this liability begins only when the process becomes adversarial. The proposed provision does not change the nature of the liability; the claimant has a right to attorney's fees only if he prevails, and a test of reasonableness applies. This proposed amendment is designed to provide claimants with better and more prompt access to legal representation where it is needed.

Costs are expected to be quite small. At the pre-adversarial stage, most of the work that an attorney might do for a claimant is actually performed by the District Director. Cases where attorney's fees have been at issue at this stage have generally been in the low hundreds of dollars. While some expansion of use of attorneys is to be expected from this provision, costs will not be imposed on businesses unless an award is made. Thus the expansion of costs is likely to be proportionally much smaller than any expansion of use of attorneys.

Witness Fees. The proposed regulations would amend the provision on witness fees to allow costs of claimants' witnesses related to cross-examination to be apportioned between both parties in cases where the claimant is indigent. Under current regulations, each party is responsible for all of the witness fees for its own witnesses. This provision is designed to limit the financial impact on indigent claimants that may result from a vigorous defense.

The costs of this proposed provision are expected to be minimal. The provision applies only when a claimant is indigent, and it generates costs only when the mine operator or insurance carrier chooses the tactic of cross-examination (as opposed, for example, to rebutting claimant's witness with witnesses of its own).

2. Cost Characteristics

Exhibit J summarized the types of compliance costs that can be expected to result from the principal provisions of the proposed regulations. These costs can be characterized as follows:

EXHIBIT J
QUALITATIVE SUMMARY OF IMPACTS, BY SOURCE

Proposed Provision	Increases in Awards	Increases in Direct Payment of Benefits
Evidentiary Development	Very Small	-
Identification of Responsible Operators	Very Small	-
Treating Physicians' Opinions	Very Small	-
Waiver of Overpayments		Loss of Overpayment
Definition of Total Disability	Small	-
Additional/Subsequent Claims	Small	-
Medical Benefits	-	- Higher Benefits

- A very small²⁰ increase in the approval rate, due to a fairer adjudication process, can be expected to result from the proposed provisions on:
 - * Evidentiary development,
 - * Identification of responsible operators, and
 - * Treating physicians' opinions.
- A small increase in the approval rate, due to somewhat broader eligibility criteria, can be expected to result from the proposed provisions on:
 - * Definition of total disability and
 - * Additional/subsequent claims.
- Higher benefits payments can be expected to result from the proposed provisions on:
 - * Waiver of overpayments and
 - * Medical benefits.

The review of costs of the proposed regulation indicates that these costs will take one of three forms:

²⁰ The terms "small" and "very small" as used in this narrative and Exhibit J are to be understood in the historical context of the black lung benefits program as explained on p.39.

- Increased benefit costs due to higher approval rates;
- Costs of defending against (mostly non-meritorious) additional claims; and
- Increased benefit costs independent of higher approval rates.

Except in cases where the coal mine operator takes on the defense against claims, all of these costs will be born in the first instance by insurance carriers and passed through to coal mine operators in the form of higher insurance premiums. Self-insured coal mine operators will bear all of the costs directly. It is quite unlikely that any but the larger insured coal mine operators would take on the defense against claims. While uninsured small mine operators may and do defend against claims, any costs that they incur because of their lack of insurance cannot be considered to be costs of this proposed regulation. Thus for purposes of the regulatory flexibility analysis, it is reasonable to conclude that small firms (in the size range of the MSHA definition) will incur regulatory costs only in the form of more expensive black lung insurance.

B. ESTIMATED CHANGES IN APPROVALS, CLAIMS, AND MEDICAL BENEFITS

1. Increase in Approvals

Analysis of the provisions of the proposal indicated that increases in awards would result from purely procedural amendments (evidentiary development, designation of the responsible operator, and weighing of the treating physician's opinion), from amendments allowing additional claims, and from amendment of the definition of total disability. Before costs of the proposed amendments can be estimated, the size of increase in awards must be estimated.

a. Baseline Level of Approvals

Initial Claims. Exhibit K shows the history of initial claims and their initial disposition from 1988 through 1998. The data show that the annual number of initial claims on responsible operators has remained constant at about 4,000 per year, with the exception of an upward spike in 1994 and 1995. The number of initial approvals of responsible operator claims slightly more than doubled (from 141 to 293) in this period, with most of the increase coming in the early 1990s. The initial approval rate slightly less than doubled over this period to 6.9 percent.

Exhibit K also shows that the annual number of initial claims on the Trust Fund has fallen by about 60 percent from a 1988 level of 3,200. The number of initial Trust Fund awards has been around 125, although it was somewhat higher in 1992 through 1994 and lower in 1995 and 1996. The initial approval rate has more than doubled, however, from 4.0 percent to 9.1 percent.

EXHIBIT K: BLACK LUNG INITIAL FINDINGS, BY YEAR^a

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Responsible Operator											
Claims	4,032	3,695	3,616	3,732	3,991	4,181	5,230	6,086	4,082	4,247	3,557
Approvals	141	127	139	159	203	231	273	282	262	293	238
Approval Rate	3.50%	3.44%	3.84%	4.26%	5.09%	5.52%	5.22%	4.63%	6.42%	6.90%	6.69%
Denials	3,891	3,568	3,447	3,573	3,788	3,950	4,957	5,804	3,820	3,954	3,319
Trust Fund											
Claims	3,194	3,252	3,621	2,295	2,166	2,006	1,867	2,177	1,512	1,376	1,212
Approvals	129	122	123	123	150	156	137	116	110	125	125
Approval Rate	4.04%	3.75%	4.69%	5.36%	6.93%	7.78%	7.34%	5.33%	7.28%	9.08%	10.03%
Denials	3,065	3,130	2,498	2,172	2,016	1,850	1,730	2,061	1,402	1,251	1,087
All Initial Claims											
Claims	7,226	6,947	6,237	6,027	6,157	6,187	7,097	8,263	5,594	5,623	4,769
Approvals	270	249	262	282	353	387	410	398	372	418	363
Approval Rate	3.74%	3.58%	4.20%	4.68%	5.73%	6.26%	5.78%	4.82%	6.65%	7.43%	7.61%
Denials	6,956	6,698	5,975	5,475	5,804	5,800	6,687	7,865	5,222	5,205	4,406

^a SOURCE: Division of Coal Mine Workers' Compensation. Data are by fiscal year.

The differences between the initial claims/approval histories for the Trust Fund and for responsible operators reflects differences in the two populations. The responsible operator claims and approvals reflect the current and relatively recent work force of miners. Their number of active miners is shrinking, so that the mix of claimants is probably becoming somewhat older. With these characteristics, the number of initial claims has been relatively stable, but the rate and number of approvals has risen. Trust Fund claims, by contrast, come from a population cohort that has been out of mining far longer, is much older, is aging more rapidly because younger miners are not entering the population, and is dying off. With these characteristics, the number of initial claims is falling sharply, the approval rate is increasing more rapidly than for responsible operator claims, and the number of approvals is relatively stable.

All Claims. Exhibit L summarizes all claims filed on or after January 1, 1982. The claims and approvals are disaggregated by one-time claimant filings and refiled claimants; miner filings and survivor filings; and responsible operator claims and Trust Fund claims. The data show the following general patterns:

EXHIBIT L: BLACK LUNG CLAIMS^a

	Total Claims	Number Approved	Percent Approved	Number Denied
MINER FILINGS				
One-Time Miner Filings				
Responsible Operator	32,655	2,004	6.14%	30,651
Trust Fund	17,316	1,727	9.97%	15,589
Combined	49,971	3,731	7.47%	46,240
Refiled Miners				
Responsible Operator	16,370	1,284	7.84%	15,086
Trust Fund	14,594	1,985	13.60%	12,609
Combined	30,964	3,269	10.56%	27,695
All Miner Filings				
Responsible Operator	49,025	3,288	6.71%	45,737
Trust Fund	31,910	3,712	11.63%	28,198
Combined	80,935	7,000	8.65%	73,935
SURVIVOR FILINGS				
One-Time Survivor Filings				
Responsible Operator	8,103	963	11.88%	7,140
Trust Fund	13,086	1,990	15.21%	11,096
Combined	21,189	2,953	13.94%	18,236
Refiled Survivors				
Responsible Operator	1,013	9	0.89%	1,004
Trust Fund	2,501	84	3.36%	2,417
Combined	3,514	93	2.65%	3,421
All Survivor Filings				
Responsible Operator	9,116	972	10.66%	8,144
Trust Fund	15,587	2,074	13.31%	13,513
Combined	24,703	3,046	12.33%	21,657
ALL CLAIMS				
Responsible Operator	58,141	4,260	7.33%	53,881
Trust Fund	47,497	5,786	12.18%	47,497
Combined	105,638	10,046	9.51%	95,592

^a SOURCE: Division of Coal Mine Workers' Compensation. Data are for claims filed on or after January 1, 1982. Automatic survivor conversions have been excluded.

- Approval rates for Trust Fund claims are higher than approval rates for responsible operator claims for all types of claimants.
- Refiled miner approval rates are higher than one-time miner filing approval rates for both types of claims, but the difference is relatively large for Trust Fund claims and relatively small for responsible operator claims. This increase appears to reflect deterioration in the

health of refiling claimants, which is greater for older Trust Fund claimants.

- Approval rates for one-time survivor filings are greater than approval rates for one-time miner filings for both types of claims.
- Approval rates for refiled survivors are quite small compared with any other approval rates, which is reasonable in light of the fact that the miners' health can no longer deteriorate because they are already dead.

The overall approval rate for responsible operator claims has been 7.33²¹ percent. For Trust Fund claims the overall approval rate has been 12.18 percent. Thus the Trust Fund claims approval rate has been about two thirds (66.2 percent) higher than the responsible operator claims approval rate.

b. Projected Increase in Approval Rate

As noted above, potential increases in approval rates may result from several of the proposed regulatory amendments. For the most part, however, the potential for increased approval rates is small. Moreover, several of these "increases" are not attributable to the regulations, since they have been mandated by case law. Unfortunately, data are not available to support specific estimates of the impact on approvals of each specific provision, or even the impact of all provisions taken together. Several commentators suggested that increases in approval rates would be large, but numerical estimates are explicitly posited as assumptions.²²

Fortunately, an empirical value -- at least an upper bound -- for the post-regulation approval rate is available. The proposed regulations represent the Department's current and past practice in Trust Fund cases. Thus the approval rate with the proposed regulations should not exceed the Trust Fund approval rate. In fact, several factors make the Trust Fund approval rate substantially higher than the responsible operator approval rate. For one thing, Trust Fund claimants are substantially older than responsible operator claimants. They are also considerably more disabled, both because they are older and because most of their coal mine employment predated MSHA dust regulations so that their exposures were higher. Because of such factors it appears reasonable to estimate that the proposed regulations would raise the approval rate by no more (and probably a bit less) than half the gap between the existing responsible operator

²¹ One commentator argued that this measure of the approval rate was in error, since the claims used as the base include both multiple claims filed by one individual and claims that are quickly withdrawn or are filed by miners who lack the ten years of coal mine employment necessary for qualification. Eliminating the multiple claims would raise the approval rate to 8.4 percent, and also eliminating the withdrawn/unqualified claims would raise the approval rate to 11.0 percent. (Robert K. Briscoe, "Cost Analysis of Federal Black Lung Act Regulations Proposed on January 22, 1997," Comments by Milliman & Robertson, Inc., August 21, 1997.) This point is well taken if the issue concerns the percent of miners (and/or survivors) who file non-trivial claims that are eventually approved. If the issue is the workload of processing claims, however, the Department's methodology is more appropriate. For costs of defending against claims, the multiple claims by one individual should be counted, even if the trivial claims perhaps should not. It does not matter a great deal which method is used, however, if the increases in approvals are measured appropriately. This can be accomplished by measuring the increase in approvals as a percentage increase, rather than in terms of the approval rate itself.

²² Briscoe, for example, assumes that the approval rate will increase from 11 percent to between 25 percent and 35 percent. This represents an increase in the approval rate of between 127 percent and 218 percent.

approval rate and the existing Trust Fund approval rate.

As noted above, the Trust Fund approval rate since 1982 has been 12.18 percent, which is 66 percent higher than the responsible operator approval rate of 7.33 percent. Our estimate is that the approval rate after the proposed regulations are adopted will rise by 30 percent to 9.5 percent. For sensitivity analysis, we will also use a “high” increase of 45 percent (to an approval rate of 10.6 percent) and a “low” increase of 15 percent (to an approval rate of 8.4 percent).

Although it might be argued that a 30 percent increase from 7.33 percent to 9.5 percent in approval rates is not small, when compared to the 47 percent approval rate applicable to claims filed from July 1973 through February 1978 it is small.

2. Increase in Claims

Analysis of the provisions of the proposal indicated that some increases in claims would result from miners’ expectations of higher award rates. The analysis also indicated that, since any increase in awards would be small and confined to specific procedural outcomes or conditions of miners, that these expectations would largely be disappointed. Thus the surge of increased claims would largely subside. Before costs of the proposed amendments can be estimated, the size and duration of this surge of additional claims must be estimated.

a. Baseline Level of Claims

Exhibit M shows the history of black lung claims since 1988, and Exhibit K showed initial claims over a similar period.²³ Data from both exhibits show the following characteristics:

- Initial claims and total claims received have shown a downward trend since 1988.
- All initial claims, initial claims against responsible operators, and total claims received rose sharply in 1994 and decreased again to relatively low levels by 1996.

Exhibit M indicates that between 1989 and 1998 total claims fell by 34.4 percent, new filings fell by 32.2 percent, refilings fell by 30.8 percent, and CM-1089s fell by 41.5 percent. The Trust Fund cohort is literally dying off, and the resulting reduction in Trust Fund claims is the principal cause of the overall decrease in claims. As Exhibit K shows, responsible operator claims have exhibited no trend.

EXHIBIT M: BLACK LUNG CLAIMS, BY TYPE OF CLAIM^a

²³

The two exhibits are not directly comparable because of slight differences in the sets of claims they show.

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total Claims Received										
Number	9,320	8,546	8,643	8,193	8,318	10,530	8,394	6,791	7,416	6,115
New Filings										
Number	4,124	3,762	4,097	3,954	3,975	5,433	4,088	3,157	3,338	2,798
Percent of Total	44.2%	44.0%	47.4%	48.3%	47.8%	51.6%	48.7%	46.5%	45.0%	45.7%
CM-1089s										
Number	2,617	2,464	2,237	2,084	2,084	2,060	1,815	1,748	1,674	1,532
Percent of Total	28.1%	28.8%	25.9%	25.4%	25.1%	19.6%	21.6%	25.7%	22.6%	25.1%
Refilings										
Number	2,579	2,320	2,309	2,155	2,259	3,037	2,491	1,886	2,404	1,785
Percent of Total	27.7%	27.2%	26.7%	26.3%	27.1%	28.8%	29.7%	27.8%	32.4%	29.2%
<small>^a SOURCE: Division of Coal Mine Workers' Compensation.</small>										

The spike of claims in 1994 coincides with, and appears to be attributable to, the passage in the House of Representatives of H.R. 2108. This bill would have given claimants a 3-to-1 advantage in medical examinations, restored unrelated death benefits, and authorized *do novo* review of certain denied claims.

H.R. 2108 and the debate surrounding it raised widespread expectations that adjudication of claims would be more liberal, with the result that approvals would rise sharply. The increase of slightly more than a third in both new filings and refilings can be attributed to these expectations. The Senate did not pass H.R. 2108, however, and so the bill was not enacted into law. By 1996 claims had fallen to new lows, and claims in 1998 were at still lower levels.

b. Projected Increase in Claims

The claims history of 1994 and 1995 is an excellent example of an expectation-driven upsurge in claims that subsided when the expectations were not realized. The terms of H.R. 2108 were substantially more favorable to claimants than the currently proposed regulations, so that expectations would have been correspondingly higher. On the other hand, since the bill did not become law, the expectations were quickly and surely disappointed -- more quickly and surely than would result from an accumulation of experience with the proposed regulations.

On balance, it is a plausible assumption to use the 1994-1995 upsurge in claims as a proxy for the temporary increase in claims that would result from the proposed regulations. The reasonableness of this assumption is enhanced by the 1996 level of claims, which suggests that not all of the 1994-1995 spike was a net increase in claims. Claims, particularly refilings, fell so sharply in 1996 as to suggest that some of the increase in 1994 and 1995 claims may have been an earlier filing of claims that would otherwise have been filed in 1996. If this was actually the case, it would mean that the increase in 1994 and 1995 claims overstates the size of the upsurge

in claims that was driven by expectations.

The size of the upsurge in claims in 1994 and 1995 was estimated using a simple linear regression equation with claims as the dependent variable and a dummy variable to capture the increased expectations in 1994 and 1995.²⁴ The coefficient of the expectations dummy variable was interpreted as the increase in claims in each of the surge years that was due to expectations. Of the several data sets that were tried, data for initial claims on responsible operators yielded the largest estimate of an upsurge in responsible operator: 1,720²⁵ claims each year or 3,440 total claims in the two-year period.

A similar regression analysis was used to estimate the upsurge of claims that was appealed to the administrative law judge level. As with claims themselves, administrative law judge appeals dropped off sharply in 1996 to below the 1993 level. Thus, despite the time lag in reaching the administrative law judge level, the surge appears to be confined to 1994 and 1995 (although, unlike claims themselves, these appeals peaked in 1995 rather than 1994). Thus the expectations dummy variable was applied only to these two years. The data that allowed the most direct comparison were data on all claims. These data produced a coefficient for the expectations dummy variable in the administrative law judge appeals equation that was 0.163 times the coefficient for the expectations dummy variable in the claims equation. This relationship was interpreted to mean that 16.3 percent of the surge in claims was appealed to the administrative law judge level.

This procedure was also used to estimate additional expectations-driven claims that reached the Benefits Review Board. In this regression, however, the coefficient for the expectations dummy variable was negative (and non-significant), which reflects a drop in referrals to the Benefits Review Board that can be observed directly by inspecting the data. This result was interpreted to mean that no additional cases went beyond the administrative law judge level. Given that the upsurge in claims was a result of inaccurate expectations, it is highly plausible that claimants realized that vigorous pursuit of their claims would not be productive.

c. Cost of Increase in Claims

The cost estimation procedure developed in Section III.B.1, above covered the costs of all increases of awards attributable to the proposed regulations. What is left to estimate is the cost of defending against additional claims that do *not* result in award. The cost of defending claims was the subject of a survey of the coal industry and related data collection and analysis, which was reported by Briscoe. The findings include the following:

- “Under current law, approximately 70 percent of notices of claim received do not ever

²⁴ The form of the equation used was: $(\text{Claims}) = c + a(\text{Year}) + b(\text{Expectations})$
where: (Claims) is the number of claims filed in a year (several different measures were tried),
 (Year) is the year in which the claims were filed (data from FY1988 to FY1998 were used),
 (Expectations) is a dummy variable (= 1 for 1994 and 1995 and = 0 otherwise),
 c is a constant term to be estimated, and
 a and b are coefficients to be estimated.

²⁵ This coefficient was significant at the 99 percent level. The trend coefficient (a), however, was quite small (18) and not remotely significant.

result in an active defense.” The reason for this is that, “under current law, many R/Os do not have the claimant examined if the initial DOL decision is a denial and if the claimant never appeals that denial. While there is some administrative cost associated with these claims, it does not have any significant financial cost under current law.”

- When claims are actively defended, the defense costs depend on the adjudication level eventually reached. The average cost of actively defending a claim is:
 - * \$3,002 for claims that go no higher than the District Director,
 - * \$7,144 for claims that go no higher than an Administrative Law Judge, and
 - * \$10,750 for claims that go still higher.²⁶

Briscoe was describing the base case, as is demonstrated by his repeated use of the phrase, “under current law.” Briscoe was writing in response to a proposal that would have required all evidentiary development prior to the hearing by the District Director. This proposal would have loaded costs earlier and changed the strategic landscape concerning a passive defense prior to the initial DOL decision. The Department has withdrawn this particular proposal, however, and there is nothing in the currently proposed regulation that would force a responsible operator or insurer out of the passive defense posture prior to the initial decision. It is reasonable to assume, therefore, that this baseline aspect of defensive strategy will continue to characterize additional claims. Thus we will assume that 70 percent of additional claims do not generate additional cost.

The total cost of defending against additional expectations-driven but non-meritorious claims can be estimated as follows. Over the two years following promulgation of the proposed regulations (1999 and 2000), there will be an estimated 3,440 such claims. Of these:

- 2,408 claims ($3,440 \times 0.7$) will not be actively defended and will not impose any significant cost;
- 864 claims ($3,440 \times 0.3 \times 0.837$) will be resolved at the district director level, at a cost of \$3,002 per case; and
- 168 claims ($3,440 \times 0.3 \times 0.163$) will be appealed to (and resolved at) the administrative law judge level, at a cost of \$7,114 per case.

The total estimated cost of additional claims that have no merit (as opposed to additional claims that have merit and are approved, which were included in the estimates above) is approximately \$3.8 million²⁷ over the first two years. This is a non-recurring cost. Whether it will be passed through by insurance companies to coal mine operators is an open question. It is not clear that there was any premium increase as a result of the upsurge of claims in 1994 and 1995. If there is a premium increase, however, it will be temporary, since the surge in claims will subside.

²⁶ Briscoe, p. 24.

²⁷ $(864 \times \$3,002) + (168 \times \$7,114) = \$3,788,880.$

The conclusion that the surge in claim filings will be transitory and not exceed two years in length before returning to prior levels is based on several factors: (1) the long term effects of Federal dust control measures in place since 1970; (2) the continuing decline in employment in the industry, especially in underground mining, documented in Exhibit H; and (3) the experience documented in Exhibit K and discussed under B.2.a. above which shows a stable pattern of responsible operator claims filings despite a rising approval rate.

However it is also possible that a permanent change in the approval rate due to new regulations may lead to an increased filing of claims. Comment is specifically solicited on whether claims will increase.

3. Increase in Medical Benefits

Analysis of the provisions of the proposal indicated that some increases in medical benefit payouts to eligible miners would result from amendment of the coverage of medical benefits. The key issue is the size of the increase in medical benefits, both absolutely and relative to other costs of compliance with the proposed regulation.

The current average level of medical benefits paid is estimated to be \$250 per year, and an estimated average of current indemnity benefits is \$7,745.09.²⁸ This brings the sum of average annual indemnity benefits and average medical benefits to about \$8,000. Medical benefits make up 3.125 percent of these total annual benefits.

To estimate the increase in average cost of medical benefits, we will use a procedure similar to that used for the increase in approval rate. The Trust Fund experience has been that the average medical benefit is \$1,736.²⁹ This benefit payment is a mega-upper bound for the possible level of medical benefits resulting from the proposed regulation. A substantial proportion of the Trust Fund population is near enough to the end of life that their medical costs are very much higher than medical costs of someone who is younger and medically stable, albeit disabled. Thus the assumption that the impact of the regulation will be to raise average medical benefits by half of the difference between Trust Fund medical benefits and Responsible Operator medical benefits is probably itself a considerable overstatement. This assumption produces an estimated increase in medical benefits of \$743, or 297 percent of the current medical benefits.

For purposes of analysis, it is useful to combine all impacts into the same comparable measure. Since medical benefits (like indemnity benefits) will be paid by insurance companies and passed along to mine operators in the form of increased premiums, insurance premiums are the reasonable numeraire for impacts. The estimated increase in medical benefit costs of \$743 is 9.3 percent of total indemnity and medical benefits. We will therefore assume that the impact of the medical benefits provision is a 9.3 percent increase in black lung insurance premiums, with high and low sensitivity analysis estimates of a 13.9 percent and a 4.6 percent increase.

4. Total Compliance Costs

²⁸ Briscoe, p. 12.

²⁹ Division of Coal Mine Workers' Compensation data for 1995.

The total increase in costs to mine operators resulting from the proposed regulation can be summarized in terms of the impact on insurance premiums. This cost has three components:

- Increased awards are projected to cause an increase in insurance premiums of 30 percent, with a sensitivity analysis range of 15 percent to 45 percent.
- Increased medical costs are projected to cause an increase in insurance premiums of an additional 9.3 percent, with a sensitivity analysis range of 4.6 percent to 13.9 percent.
- Increased non-meritorious claims are projected to impose costs of \$1.9 million per year for two years. This is 2.4 percent of the \$79.9 million in direct payments made by responsible operators in 1995.³⁰ We will assume, therefore, that the result is a temporary increase in insurance premium rates of 2.4 percent.

Overall, insurance premiums are projected to increase by:

- 41.7 percent initially (with a sensitivity analysis range of 22.0 percent to 60.3 percent); and
- 39.3 percent in the long term (with a sensitivity analysis range of 19.6 percent to 58.9 percent).

The central projections are themselves conservatively high for a variety of reasons noted above in their development. Implicit in this analysis is the assumption that insurance premiums, which have been relatively stable for the past decade, accurately reflect the insurers' costs under current conditions. Therefore, any increases in the number of claims to be defended or approval rates or the costs of claims can be projected as increased premium costs which the insurers will seek to pass on to coal mine operators. Comment is solicited on this assumption as well as the individual cost projections contained in this analysis.

This analysis has included all of the costs associated with impacts on mine operators. Several apparent omissions have, in fact, been included. Mine operators that self-insure have been included by assuming that they utilize commercial insurance, which probably overstates the costs that they would actually incur. Costs will be borne by both mine operators and insurance carriers, but they will not both incur the same costs for the same activities; to attribute such costs to both and then add these costs up would double-count costs. These projected increases in insurance premiums will be used in the next chapter as the basis for impact analysis.

5. Total Annual Costs to the Coal Mining Industry

The analysis presented above estimated compliance cost as a percent of insurance premiums. Total annual cost to the coal mining industry can be estimated as follows: First, compute compliance costs as a percent of revenue for each of the three 4-digit SIC industries

³⁰ Briscoe, p. 17.

(underground bituminous, surface bituminous, and anthracite). Second, estimate a weighted average of these three percentages, and multiply this times total industry revenue.

Compliance Costs as Percentages of Revenue. Compliance costs per dollar of insurance premiums can be converted into compliance costs per dollar of revenues using the following formula:

$$\frac{\text{Compliance Cost}}{\text{Revenue}} = \frac{\text{Compliance Cost}}{\text{Insurance Premium}} \times \frac{\text{Insurance Premium}}{\$100 \text{ Payroll}} \times \frac{\text{Covered Payroll}}{\text{Revenue}}$$

Substituting values for each 4-digit industry³¹ into this formula produces compliance cost estimates of:

- 0.468 percent of revenue for underground bituminous coal;
- 0.217 percent of revenue for surface bituminous coal; and
- 0.684 percent of revenue for anthracite coal.

Annual Compliance Costs. Using shares of total production as weights,³² the weighted average of compliance costs as a percent of revenue is 0.315. For the 1995 revenues of \$19.389 billion, this results in an estimate of \$61.07 million. A similar calculation using the value of 0.393 instead of 0.417 indicates that, after the transitory impacts have subsided, the annual cost to the industry will be \$57.56 million. Using the ranges discussed above, the annual costs during the initial period would be between \$32.22 million and \$88.32 million. If the upsurge in claims is transitory, the range of annual costs would be \$28.71 million to \$86.26 million.

³¹ These costs are as follows:

	<u>Compliance Cost</u> <u>Insurance Premium</u>	<u>Insurance Premium</u> <u>\$100 Payroll</u>	<u>Payroll</u> <u>Revenue</u>
Underground Bituminous	0.417	\$3.65 ^a	0.308
Surface Bituminous	0.417	\$3.65 ^a	0.143 ^c
Anthracite	0.417	\$6.31 ^b	0.450 ^c

^a SOURCE: Proposed Rule, January 22, 1997, 62 Federal Register 14, p. 3372.

^b SOURCE: Exhibit F (above).

^c SOURCE: Section II.E.3 (above).

³² See Exhibit A (above) for production. The production-based weights are:
0.384 for underground bituminous coal;
0.612 for surface bituminous coal; and
0.004 for anthracite coal.

IV. REGULATORY IMPACTS

A. METHODOLOGY

1. Impact Measures

There are, in general, two ways for a business to deal with the cost imposed by a regulation: It may pass the costs through to consumers in the form of higher prices, or it may keep its price constant and absorb the higher costs in the form of reduced profits. In practice, firms usually do some of both. If a business cannot do either (or both) of these sufficiently to finance the costs of the regulation, it will have to retrench or go out of business. Closure of establishments, of course, raises questions of economic feasibility of the regulation.

In principle, it is appropriate to estimate the demand curve, determine the optimum degree to which prices can be raised to absorb part of the regulatory costs, and then estimate the reduction in profits that would be necessary to absorb the remainder of the compliance costs. In practice, estimation of a demand curve adds a great deal of complexity to the analysis and is usually not necessary. A simpler approach is to estimate the impacts under two alternative -- and mutually exclusive -- assumptions. First, assume that all costs will be passed through in the form of higher prices. Second, assume that all costs will be absorbed in the form of reduced profits. If either (or both) of these assumptions leads to the conclusion that regulatory impacts can be accommodated, the optimal combination of a price increase and reduced profits will accommodate -- and generally further mitigate -- the impacts. This is the methodological approach that is used below.

2. Vulnerability Factors

A regulatory flexibility analysis should not just look at size; it should also consider other factors that affect the impacts on a business. These factors include:

- The insurance premium rate, which varies depending on:
 - * The specific industry (anthracite or bituminous),
 - * The type of mining (underground or surface),
 - * The state, and
 - * The type of insurance (assigned risk pool or commercial market);
- The labor intensity of the mining operation; and
- The financial condition of the business (well below average, average, or above average).

Of these factors, differences in insurance premium can be addressed by using different representative scenarios. Below-average financial conditions are reflected in first quartile (rather than median) financial data. Data on labor intensity within one industry are not available.

The following analysis of impacts of the proposed regulations on small coal mines is

based on representative establishments with the following characteristics:

- Both bituminous and anthracite mines are included:

Underground bituminous mines are included, rather than surface bituminous mines.³³

- Bituminous coal mining insurance premium rates used include:
 - * Voluntary market premiums in Alabama, Illinois, Tennessee, and West Virginia, and
 - * Assigned risk premiums in Alabama, Illinois, and Tennessee.
- “Small” mines includes mines with under 20, 20 to 49, and 50 to 99 miners.

Baseline measures for assessing the degree of disproportionality of impacts on small mining companies will include mines with over 500 employees and average mines (i.e., mines with mean or median characteristics) using the voluntary market premiums in each of the above four states.³⁴ Exhibit N summarizes the key characteristics -- size, productivity, and insurance premium rates -- of these representative mines.

B. POTENTIAL PRICE IMPACTS

1. Potential for Price Increases

The potential increase in price can be estimated by computing compliance costs as a percent of revenue for each representative mine. The result of this computation is the percent by which the price of coal must be increased to cover the costs of compliance of the regulation, which take the form of an increase in insurance premiums. The value required is the increase in insurance premiums per \$100 of revenue. The computation is simplest for the average underground bituminous coal mine, which can serve as a useful illustration:

$$\frac{(\text{Increase in Premium})}{(\$100 \text{ of Revenue})} = \frac{(\text{Increase in Premium})}{(\text{Dollar of Premium})} \times \left(\frac{\text{Premium}}{\$100 \text{ of Payroll}} \right) \times (\$100 \text{ of Payroll}) \times (\$100 \text{ of Revenue})$$

EXHIBIT N FACTORS AFFECTING COST IMPACTS ON
--

³³ Surface mines will incur substantially smaller impacts for at least two reasons. First, black lung insurance premium rates are substantially lower for surface mines than for underground mines. Second, overall productivity is about 2.5 times as high in surface mines as in underground mines (see Exhibit G). The combined effect of these two factors is that impacts on surface mines are probably substantially less than one quarter as large as impacts on underground mines.

³⁴ “Large” underground bituminous coal mines will be assumed to exist in each of these states for purposes of comparison, even if they do not. The average mines will be assumed to have average characteristics for all mines in SIC 1222, not for the mines in a given state. No large anthracite mines exist, so that the average will be that of the small size classes.

DIFFERENT SIZE CLASSES OF MINES

	1 - 19 Employees	20 - 49 Employees	50 - 99 Employees	Over 500 Employees	Industry Average
BITUMINOUS COAL					
Alabama					
Productivity^b	371	6,092	7,407	4,890	6,803
Premium Rate					
Market	\$3.19	\$3.19	\$3.19	\$3.19	\$3.19
Assigned Risk	\$5.37	\$5.37	\$5.37	\$5.37	\$5.37
Illinois					
Productivity^b	371	6,092	7,407	4,890	6,803
Premium Rate					
Market	\$3.95	\$3.95	\$3.95	\$3.95	\$3.95
Assigned Risk	\$4.74	\$4.74	\$4.74	N.A.	N.A.
Tennessee					
Productivity^b	371	6,092	7,407	4,890	6,803
Premium Rate					
Market/Assigned	\$4.31	\$4.31	\$4.31	\$4.31	\$4.31
West Virginia					
Productivity^b	371	6,092	7,407	4,890	6,803
Premium Rate					
Market	\$3.00	\$3.00	\$3.00	\$3.00	\$3.00
ANTHRACITE COAL					
Productivity^b	2,675	669	2,513	N.A.	2,078
Premium Rate^c	\$6.31	\$6.31	\$6.31	\$6.31	\$6.31

^a SOURCE: Exhibit A, Exhibit B, and Exhibit F.

^b Short tons per miner per year. Productivity by size class from national data.

^c Reported Pennsylvania loss cost times 1.173 (the mean ratio of rate to loss cost for other states).

The values on the right side of the equation were developed previously and are as follows:

The point estimate of increase in premium per dollar of premium was a 41.7 cents per dollar or 41.7 percent (with 22.0 percent and 60.2 percent as low and high estimates).³⁵

The premium per dollar of payroll varies with the state and type of insurance,³⁶ but (for simplicity of illustrating the computation) we will assume the West Virginia value of \$3.00 per \$100.

Payroll upon which the black lung rider should be based was estimated to be 30.8 percent of revenue³⁷

- for the underground bituminous coal mining industry, or \$30.80 per \$100 of revenue.

$$\begin{aligned} \frac{(\text{Increase in Premium})}{(\$100 \text{ of Revenue})} &= \frac{\$0.417}{\$1.00} \times \frac{\$3.00}{\$100} \times \frac{\$30.80}{\$100} \\ &= \frac{\$1.251}{\$100} \times \frac{\$30.80}{\$100} \\ &= \frac{\$0.385}{\$100} \\ &= 0.385 \% \end{aligned}$$

For specific size classes, the computation is slightly more complicated. Because of the nature of insurance, different size classes face the same insurance premium (unless they have to resort to a different market -- which is covered in the representative mines) and thus similar percentage increase in rates. Where size classes differ is in productivity -- the ratio of payroll to revenue. An adjustment must therefore be made to obtain a payroll/revenue ratio specific to each size class. This adjustment can be made by multiplying the above formula by the ratio of revenue per employee for the average mine to revenue per employee for a mine in each size class. Assuming that the price of coal is the same for different size classes, that ratio is the same as the ratio of average productivity to size-class productivity.

³⁵ See Section III.B.4.

³⁶ See Exhibit H or Exhibit N.

³⁷ See Section II.E.3.

For a large mine (over 500 employees), this ratio is 1.391, resulting in payroll-to-revenue ratio of 0.428 and (assuming the West Virginia premium rate) an estimate that costs are 0.536 percent of revenue.³⁸

Similarly for a mine with 50 to 99 employees, the adjustment factor is 0.918 and estimated costs are 0.354 percent of revenue; and for a mine with 20 to 49 employees estimated costs are 0.430 percent of revenue.

For the smallest size class of mine, however, the procedure breaks down. Here the adjustment would produce a payroll-to-revenue ratio of 7.06, which is clearly impossible. Something is amiss with either the working assumptions or the data.³⁹

If a mine is to remain in business, the baseline payroll-to-revenue ratio cannot exceed 1.00. We will therefore assume that this is the ratio for these small mines. This is not altogether an unattractive assumption. It represents a worst-case scenario that will produce an upper-bound estimate of impacts (at least with respect to this variable). Moreover, most of the costs of small contract mine operators may actually be payroll, in which case the assumption is not too far off. For the West Virginia premium, the assumption of a payroll-to-revenue ratio equal to 1.00 produces an estimate that compliance costs are 1.25 percent of revenue.

Exhibit O shows the full results for impacts on the different representative mines under the different cost scenarios. Relative to revenue, costs for the smallest size class of bituminous coal mines (fewer than 20 employees) are more than three times as high as the industry average. By contrast, the next smallest size class (20 to 49 employees) has costs as a percent of revenues only about 10 percent higher than the industry average. In absolute terms, the smallest mine operators would have to increase their price by between 1.25 percent and 2.25 percent to recoup their increases in insurance premiums.

Anthracite coal mine operators would have to increase prices by an estimated 3.3 percent to recoup their increases in insurance premiums. This relatively large increase results from the relatively high labor intensiveness and the relatively high black lung insurance premiums for Anthracite coal mining. Anthracite mines are all small,⁴⁰ however, so that they are not at a competitive disadvantage relative to large Anthracite mines.

³⁸ The very largest underground coal mines have lower productivity and larger regulatory impacts than mines that are a bit smaller (but still fairly large). This may be due to diseconomies of scale in such activities as transportation in a very large mine or to peculiarities of the specific mines (which number only nine). This result does not occur in surface coal mines.

³⁹ Likely candidates are much lower pay per miner in very small mines, under-reporting of output, and fewer months worked per years. Miners in large unionized mines tend to work a lot of overtime, as mine operators try to spread the fixed per-miner cost of large benefits packages typical of union contracts. Many very small mines have only a couple of miners, which may mean that these very small mines are simply quite different from larger mines.

⁴⁰ Computations by size indicate that Anthracite mines with fewer than 20 employees and with 50 or more employees would need similar price increases to recoup compliance costs, but that mines with 20 to 49 employees would require price increases nearly four times as large. This result is due in large part to a high proportion of milling operations in this middle size class. Since MSHA data assign zero production to milling units (to avoid double-counting of production), this difference in productivity is artificial. Accordingly, results for Anthracite mines are presented for one "small" size class -- fewer than 100 employees -- which includes the entire industry.

EXHIBIT O
PERCENT INCREASE IN PRICE NEEDED
TO COVER COSTS OF THE PROPOSED REGULATION^a

	Under 20 Employees	20 to 49 Employees	50 to 100 Employees	Over 500 Employees	Industry Average
BITUMINOUS COAL					
Alabama Premiums					
Market	1.33% ^b	0.46%	0.38%	0.57%	0.41%
Assigned Risk	2.24% ^c	0.77%	0.63%	0.96%	0.69%
Illinois Premiums					
Market	1.65% ^d	0.56%	0.47%	0.71%	0.51%
Assigned Risk	1.98% ^e	0.68%	0.56%	0.85%	0.61%
Tennessee Premiums					
Market/Assigned Risk	1.80% ^f	0.62%	0.51%	0.77%	0.55%
West Virginia Premium					
Market	1.25% ^g	0.43%	0.35%	0.54%	0.38%
ANTHRACITE COAL					
Premium	h	h	h	-	3.31% ^{h,i}

^a Point estimate for the first two years. Results for sensitivity analysis and out years are in notes.

^b The sensitivity analysis range is from 0.67% to 2.00%. Estimate for the out years is 1.25%.

^c The sensitivity analysis range is from 1.12% to 3.36%. Estimate for the out years is 2.11%.

^d The sensitivity analysis range is from 1.02% to 3.05%. Estimate for the out years is 1.56%.

^e The sensitivity analysis range is from 0.99% to 2.97%. Estimate for the out years is 1.87%.

^f The sensitivity analysis range is from 0.90% to 2.70%. Estimate for the out years is 1.70%.

^g The sensitivity analysis range is from 0.63% to 1.88%. Estimate for the out years is 1.18%.

^h The large number of Anthracite coal milling operations, to which MSHA data assign zero production, distorts the relative productivity of different size classes (see Exhibit N), so that size class data seem unreliable.

ⁱ The sensitivity analysis range is from 1.66% to 4.97%. Estimate for the out years is 3.12%.

2. Ability to Pass Cost Increases Through to Consumers

In round numbers (at a price for coal of \$20 per ton), operators of small underground bituminous coal mines would have to increase their prices on the order of \$0.40 per ton to recoup the insurance rate increases, or about \$0.20 to \$0.30 per ton more than larger underground mine operators. This is a substantial increase, but it is helpful to put it into perspective. The major market for coal, electric utilities, is not price sensitive because of the highly fixed nature of coal-fired generating capacity. The increase is smaller than the differential between insurance rates in Tennessee and West Virginia, or between the market rate and the assigned risk rate in Alabama. Coal prices fell by a larger amount each year in the early 1990s. The insurance cost increase is considerably smaller than usual transportation costs or the cost differential between costs of traditional underground mining methods and large-scale surface mining or long-wall mining. This perspective suggests that most small mine operators will be able to pass most or all of the costs through to their customers. Yet small mine operators that already are at the high end of these cost differentials will have problems.

Anthracite mine operators would have to raise prices by more than small bituminous coal mine operators to recoup compliance costs, but they are better positioned to pass costs through to their customers. First, the entire Anthracite sector is affected similarly; there are no large mines or mines using more efficient mining methods that would have lower compliance costs. Second, the high quality of Anthracite coal gives it a degree of product differentiation in metallurgical markets where quality is of great importance. Finally, federal legislation guarantees a market for electricity produced by co-generation market, so that the co-generation demand for Anthracite is almost totally price-inelastic.

3. Implications for Impacts

The size of price increases that small mine operators would need to recoup estimated compliance costs is clearly significant. While the market can be expected to allow most coal mine operators to recoup their costs, the less well positioned small bituminous coal mine operators probably will not be able to do so. The small mine operators that will face the largest cost impacts and will have the greatest difficulty passing costs through to customers are already the ones who are high-cost producers because of their traditional, labor-intensive, and inefficient mining methods. Contract mine operators as a group will also face competitive pressures.

C. POTENTIAL IMPACTS ON PROFITS

1. Profitability of Coal Mines

Exhibit P shows profitability -- rate of return on sales -- in the coal mining industry over the last three years. This is the most convenient measure of profitability, since the impacts of the proposed regulation have already been estimated in this form. It is probably also the most realistic measure, since some small coal mine operators have very little in the way of assets or net worth.

EXHIBIT P
PROFITABILITY OF THE COAL MINING INDUSTRY
(Return on Sales)

	1995	1996	1997
COAL MINING (SIC 12)			
Establishment Data^a			
All Mines			
First Quartile	1.7%	0.2%	0.5%
Median	3.9%	4.9%	4.6%
\$1,000,000 - \$5,000,000 Assets^b			
First Quartile	0.6%	(1.5%)	0.2%
Median	2.6%	4.3%	7.6%
\$5,000,000 - \$25,000,000 Assets^c			
First Quartile	5.4%	2.8%	3.0%
Median	9.2%	11.7%	7.2%
Over \$50,000,000 Assets			
First Quartile	2.7%	(1.5%)	3.8%
Median	4.3%	2.2%	7.1%
UNDERGROUND COAL MINING (SIC 1222)			
Establishment Data^a			
All Mines			
First Quartile	2.6%	(1.0%)	0.8%
Median	4.3%	2.9%	4.0%
Firm Data^d			
All Mines			
First Quartile	0.0%	2.5%	0.0%
Median	3.0%	4.7%	1.3%

^a SOURCE: Dun & Bradstreet, Industry Norms and Ratios.

^b Dun & Bradstreet estimates this is equivalent to 13 to 67 employees.

^c Dun & Bradstreet estimates this is equivalent to 67 to 333 employees.

^d SOURCE: Dun & Bradstreet, "DUNS Financial Profiles."

Dun & Bradstreet provides the most comprehensive industry financial data, and Exhibit P shows the most detailed data available. Unfortunately, disaggregation by size is not available for SIC 1222; disaggregation by employment is unavailable; and data are unavailable for the smallest mine operators (under about 13 employees), who are central to a regulatory flexibility analysis.

The data show quite a lot of variability, which is not necessarily systematic. The smallest mine operators are the least profitable, for example, but the largest are also less profitable than the mid-sized operators (a result that is consistent with the productivity reported in Exhibit N). Some of the profit rates for SIC 1222 are higher than corresponding profit rates for SIC 12;

others are lower. The same is true of firm profit rates relative to establishment profit rates in SIC 1222. Since these data are based on subsets of mines, for which Dun & Bradstreet has financial data, the sampling of reporting mines probably plays a substantial role in the variability.

Because the nature of the exercise is to assess impacts on the more vulnerable businesses, the first quartile profit rates are of greatest interest. These are almost always less than half of the corresponding median profit rate, and they vary all the way down to losses. Third quartile data are not of interest and are not included in Exhibit P.

There are several possibilities to use for the profit of small underground mine operators. The most size-specific data are SIC 12 data for \$1,000,000 to \$5,000,000 in assets. The industry-specific (SIC 1222) data are not disaggregated by size. Since other data used above are for 1995, this is a preferable year. Because 1995 was the most profitable of the three most recent years in most of the first-quartile data, using 1995 data may bias the profitability upwards. On the other hand, a multi-year average of first quartile data may bias profitability downward, since many mines will probably not have been in the first quartile all three years. A zero or negative profit rate is not of particular interest, since long-term losses (even without regulatory impacts) will eventually force the firm out of business anyway. Thus zero or negative profit rates only highlight the volatility of profits and raise further questions about relying on any one profit rate.

In view of these issues, a range of profit rates appears to be the most fruitful approach. Exhibit Q and the following analysis will draw on the following profit rates:

- For size-class measures of profit, first quartile profits will be used, and the range will be defined by six combinations of:
 - * Two time frames:
 - 1995 data on profit rates, and
 - A 3-year unweighted average of 1995 to 1997 data on profit rates; and
 - * Three versions of industry data:
 - SIC 12 profit rates for the most nearly appropriate size class,
 - SIC 1222 profit rates based on D&B establishment data, and
 - SIC 1222 profit rates based on D&B firm data.
- For the benchmark industry average, median profits will be used, and the range will be defined by four combinations of:
 - * Two time frames:
 - 1995 data on profit rates, and
 - A 3-year unweighted average of 1995 to 1997 data on profit rates; and
 - * Two versions of industry data:
 - SIC 1222 profit rates based on D&B establishment data, and
 - SIC 1222 profit rates based on D&B firm data.



EXHIBIT Q
POTENTIAL IMPACT OF THE PROPOSED REGULATION ON
PROFITABILITY IN UNDERGROUND COAL MINING

	Baseline Profit Rate	Costs as a Percent of Sales	Impacted Profit Rate
BITUMINOUS COAL			
1 - 19 Employees	0.6% ^a	2.2%	(1.6%)
	2.6% ^b	2.2%	0.4%
20 - 49 Employees	0.6% ^a	0.8%	(0.2%)
	0.8% ^c	0.8%	0.05%
	2.6% ^b	0.8%	1.8%
50 - 99 Employees	0.8% ^d	0.6%	0.2%
	5.4% ^e	0.6%	4.8%
Over 500 Employees	0.8% ^d	1.0%	(0.2%)
	1.7% ^f	1.0%	0.7%
	2.7% ^g	1.0%	1.7%
Industry Average	3.0% ^h	0.7%	2.3%
	4.3% ⁱ	0.7%	3.6%
ANTHRACITE COAL			
	0.6% ^a	3.3%	(2.3%)
	1.7% ^j	3.3%	(1.6%)

- ^a First quartile value, SIC 12 1995 data for mines with \$1,000,000 to \$5,000,000 in assets.
- ^b First quartile value, SIC 1222 1995 establishment data for all mines.
- ^c First quartile value, SIC 1222 3-year average firm data for all mines.
- ^d First quartile value, SIC 1222 3-year average establishment data for all mines.
- ^e First quartile value, SIC 12 1995 data for mines with \$5,000,000 to \$25,000,000 in assets.
- ^f First quartile value, SIC 12 3-year average data for mines with \$50,000,000 or more in assets.
- ^g First quartile value, SIC 12 1995 data for mines with \$50,000,000 or more in assets.
- ^h Median value, SIC 1222 1995 and 3-year average firm data for all mines.
- ⁱ Median value, SIC 1222 1995 establishment data for all mines.
- ^j First quartile value, SIC 12 1995 data for all mines.

From these four or six possible profit rates, the analysis reflected in Exhibit Q uses the following profit rates:

- The lowest positive profit rate;
- The highest profit rate; and
- The lowest profit rate that leaves positive profits after impact (if different from either of the above).

2. Potential Reduction in Profitability

The results in Exhibit Q indicate that bituminous coal mine operators with fewer than 20 employees are likely not to be able to absorb compliance costs through reduced profits. As noted above, there is a fair amount of uncertainty about which measure of profitability to use. For this group of mine operators, however, all the possibilities except the 2.6 percent in Exhibit Q are under 1 percent, so that the conclusion that losses will occur is fairly robust.

Other size classes of bituminous coal mine operators would fare better. Although some would incur losses with the lowest profit rate among the possibilities, most potential measures of profitability would leave them with positive profits. Thus it is reasonable to conclude that they generally could absorb compliance costs through reduced profits.

Anthracite coal mine operators appear less able to absorb compliance costs through reduced profits than the smallest bituminous coal mine operators. While there is even more uncertainty about which profit rate is most applicable, none of the first quartile profit rates for small or all coal mines would cover the compliance costs for Anthracite mines.

3. Implications for Impacts

The results presented in Exhibit Q indicate that impacts on profitability may be severe for some small coal mine operators. It should be noted, however, that this level of impacts is a potential threat only to the smallest and financially weakest coal mine operators. At median profitability rates, all size classes of mine operators would be able to absorb compliance costs through reduced profits. Moreover, many others would be able to pass through to customers any compliance costs they could not absorb through reduced profits. Thus the potential for significant impacts is localized, not a general threat to the industry. It is, in short, the sort of impact that a regulatory flexibility analysis is intended to address.

D. POTENTIAL CLOSURES

1. Conditions for Closure and their Likelihood

If a marginal firm is not in a position to pass a new cost through to customers and is not making sufficient profit to absorb the costs, and if this situation persists, the firm will be forced to leave that line of business. This market dynamic frames the issue for this (or any other) proposed regulation: Are the costs of the proposed regulation too high for some mine operators to absorb or pass on?

The previous analysis indicates that one group of mine operators is at real risk of closures. These are very small underground bituminous coal mine operators (i.e., fewer than 20 employees) that are only marginally profitable. Larger underground bituminous coal mine operators and/or those that use mechanized, capital-intensive mining methods appear able to deal with compliance costs either by passing them through to customers or by absorbing them through reduced profits, and they can be expected to find a satisfactory combination of these two approaches. Surface bituminous coal mine operators have only a fraction of the costs incurred by underground mine operators, so that impacts of the proposed regulation should pose no threat to them.

Contract miners occupy a peculiar position. Their extreme labor-intensiveness makes them subject to relatively large impacts from a regulation that affects black lung insurance premiums. Yet contract mine operators do not face competition from substantially less labor intensive contract mine operators, because high labor-intensiveness is the nature of contract mining as an institution. The institution of contract mining derives its existence from mine owner's preferences, and this demand is unlikely to be weakened by an increase in insurance premiums. The real issue is who will absorb these costs -- whether they will be passed forward to the mine owners or backward to the miners in the form of lower wages. Although individual contract mine operators may close down, there is no clear reason to expect a substantial net decrease in this type of operation.

Anthracite coal mine operators (who are generally small) will probably be able to pass costs through to customers because of product differentiation that keeps bituminous coal from being a good substitute, even if they are not profitable enough to cover the costs themselves. It is the very small, high-cost, marginally profitable, underground bituminous coal mine operators that face a significant likelihood of closure.

2. Baseline Entry and Exit

Whether closures can be considered to be impacts of regulation depends in part on the prevailing conditions in the industry prior to the regulation and the projected baseline without the regulation. If prevailing industry conditions are forcing numerous firms to leave the industry, a regulation with large costs may have little ultimate impact on closures. Instead, it will affect primarily the timing and possibly the identity of specific firms that close. Conditions in the coal mine industry tend to be of this nature in several respects.

The number of active mines is decreasing at a rapid rate. Since 1990, the number of underground bituminous coal mines has fallen by an average of nearly 10 percent per year. Competition from new underground mining technologies and from large-scale surface mines is a major factor in the closing of less efficient underground bituminous mines (and high-cost surface mines as well). In some areas of the eastern United States, high sulfur content of the coal puts the mines at a further competitive disadvantage. Labor-intensive mines will incur relatively high compliance costs of regulations whose impact is proportional to the number of miners, but it is the underlying inefficiency of labor-intensive techniques -- not the regulatory costs as such -- that leads to closures in the face of competition.

. Since 1990, the number of anthracite mines (exclusive of culm bank operations) has fallen by 5 percent per year. Anthracite coal mining is too costly for the coal to be competitive beyond localized and/or specialized markets where proximity or purity give it extra value to the users. For anthracite coal, supply constraints also appear to be a factor. Current anthracite mining essentially consists of reworking old mines that (without niche markets) might otherwise have been abandoned. The gradual playing out of economically recoverable supplies appears to be a factor in the closure of mines.

Another type of baseline closure is found among small, undercapitalized mine operators. Contract miners and mine operators who evade the Black Lung Act are types of operators whose existence is somewhat tenuous and subject to entry into, exit from, and re-entry into the mining industry. Such marginal operators (particularly the insurance evaders) may not really be covering all of their costs to begin with, in which case getting caught in one of the corners they cut (e.g., having a black lung claim filed against an uninsured operator) may be enough to drive them out of business. Yet the organizers and miners are likely to be back in the coal mine business after a relatively short period has elapsed. The extent of this phenomenon is unclear, since data are unavailable. It is not really accurate to attribute a closure to new regulatory costs, however, when any one of a number of probabilistic events, such as labor problems, a drop in the price of coal, exhaustion of the seam of coal being mined, increases in interest rates cutting off credit needed for operating capital, the expiration, non-renewal or revocation of leases or permits, would have had a similar result.

3. Implications for Impacts

The baseline condition for the mining industry is one of rapid exit of mine operators from the industry and reduction in the number of mine operators. This is occurring for a variety of reasons, including rapid expansion of low-cost, mechanized mining methods, substitution of surface mining for underground mining, turnover of mine operators, and (in some localities) exhaustion of seams economically mined. Quite small, marginal, high-cost, labor-intensive mining operations may not be able to absorb or pass through the costs of the proposed regulation, and they may close down. The mining operations that are marginal enough to be significantly impacted by this regulation, however, have the same characteristics that make them highly vulnerable to far stronger competitive pressures and industry trends. In all likelihood, a mine operator who would be forced out of business by the costs of the proposed regulation would not survive more than a very few years under existing baseline conditions. Under these circumstances, it is not valid to conclude that the proposed regulation itself has widespread impacts.

E. CONCLUSIONS

This regulatory flexibility analysis has focused on the mines with characteristics that lead to the greatest impacts -- small size, underground mining, high labor-intensiveness, low productivity and profitability, and high insurance premiums. These are also the characteristics of mine operators that are closing in large numbers, as well as the characteristics of mines that potentially could have significant impacts from the proposed regulations. Several conclusions can be drawn from this analysis:

- The potential for significant impacts is not widespread; it is limited to mining operations with this set of characteristics.
- Given the vulnerability of such mining operations to the prevalent baseline competitive pressures and changes in the coal mining industry, the proposed regulation will not have significant impacts above and beyond the baseline, although it may act as a “straw that broke the camel’s back.”
- An attempt to prevent the inevitable closure of small, marginal mines by significantly weakening the proposed regulation would be unavailing. Reasonable and feasible regulatory flexibility alternatives that are consistent with the purposes of the regulation, on the other hand, are certainly in order if they can be devised.
- For regulatory flexibility purposes, 20 employees is the appropriate size cutoff for the definition of “small” mine operators; it is most appropriate to target regulatory flexibility alternatives on “small” mines with fewer than 20 employees.

V. DEVELOPMENT OF REGULATORY FLEXIBILITY ALTERNATIVES

A. APPROACHES TO REGULATORY FLEXIBILITY

There are several basic techniques to use in developing regulatory flexibility alternatives. These techniques are outlined here.

1. Exemption

Small businesses may be given regulatory relief by being exempted either from a regulation as a whole or from individual regulatory requirements. In principle, for example, small mine operators might be:

- Allowed to challenge their designation as responsible operators later in the process than large mine operators (i.e., invoke the current regulation);
- Exempted from the proposal for waiver of overpayments;
- Relieved of the burden of proof imposed by the proposed regulation on medical benefits (i.e., operate under the current regulation); or
- Exempted from the proposed requirement to bear part of the witness fee of indigent claimants' witnesses whom they wish to cross-examine.

2. Tiering

Tiering of regulatory requirements by size of business is another type of regulatory flexibility measure. The technique of tiering entails scaled-down requirements for small businesses. The proposed civil money penalty is an example of tiering, since the size of the penalty varies with the size of the mine operator. This example of tiering is a particularly fruitful one, since the purpose of this provision is not so much to punish mine operators or to drive them out of business (as large fines might do to small mine operators) as to bring them into compliance with the Act. Use of simplified reporting forms is another type of tiering. Most regulatory provisions from which small businesses might be exempted are also candidates for some type of tiering.

Use of thresholds is another technique that closely resembles both tiering and exemption. Thresholds use some measure other than business size, which is related to the problem being addressed by the regulation. Either exemption or reduced requirements may be applied below the threshold. A mine with at least a five-year history of no dust violations, to give an illustrative example, might be wholly or partially exempt from some of the proposed regulatory provisions.

3. Deferral of the Effective Date

Deferral of the effective date of proposed regulatory provisions for small mine operators

is another possible approach. Deferral of the effective date is typically used when capital costs are large enough to pose financing problems if they were all incurred at once, or to allow expensive equipment to be replaced in its natural life cycle rather than requiring it to be retrofitted. Deferral of the effective date is an interesting approach, since the upsurge in filings of claims (and related costs) is expected to be transitory. Cost impacts on small mine operators would be significantly reduced if they could be excused from compliance until after this upsurge had subsided.

B. CONSTRAINTS ON REGULATORY FLEXIBILITY ALTERNATIVES

Development of regulatory flexibility alternatives must also consider the specifics of the Black Lung Benefits Act and the institutional factors surrounding claims for benefits. These factors may constrain the development of workable regulatory flexible alternatives. The principal issues are discussed below.

1. Targeting Regulatory Relief to Small Businesses

Targeting of regulatory relief to small mine operators may be affected by several institutional factors. These factors have to do both with the nature of insurance and with the identification of a responsible operator.

a. Regulatory Costs and Insurance Premiums

Analysis of compliance costs of the proposed amendments indicated that any costs of the proposed regulations will take the form of costs of defending against increased filings, costs of paying benefits to additional miners, and costs of paying additional medical benefits to miners who would qualify anyway. The latter two forms of cost will be borne by insurance carriers, except for (generally large) mine operators that self-insure, and an insurance carrier will almost certainly bear the costs of defending against a claim on a small mine operator. Thus the impact of regulatory costs on small mine operators will come through increases in black lung insurance premiums. The consequence of these factors is that any measure intended to reduce regulatory costs to small mine operators would, in the first instance, benefit insurance carriers.

Black lung insurance premiums vary with a number of factors. They differ by type of coal (bituminous or anthracite), by type of mine (surface or underground), and by state. For mine operators that purchase insurance, however, there is generally⁴¹ no difference in the black lung insurance premium per \$100 charged to large and small mine operators.

b. Designation of the Responsible Operator

Several criteria might be used to designate the responsible operator, including last

⁴¹ Differences arise only in states (e.g., Illinois and Kentucky) where state-mandated rates apply only to an assigned risk pool and where operators who do not have to use this pool may attempt to negotiate rates with approved insurance carriers.

employer, length of employment, and condition of mine at the time of employment. In practice, the last employer is designated, with length of employment as a threshold. This designation is inherently somewhat arbitrary in the sense that, in any given claim, one could argue the appropriateness of the designation. In the aggregate, however, it has the reasonably fair effect of spreading the claims among mine operators roughly in proportion to employment, payroll, and insurance premiums.

As with insurance itself, designation of responsible operators has a randomizing and spreading effect on regulatory relief. In any given application of a regulatory flexibility alternative, the mine operator that would benefit -- the mine operator the miner last worked for, large or small -- is virtually random. Again, much of the relief intended for small mine operators would be shared by all mine operators that purchase commercial black lung insurance.

2. Legal Requirements

a. The Black Lung Benefits Act

The Regulatory Flexibility Act stops short of requiring regulatory flexibility alternatives that would defeat the purposes of the statute being implemented. The statutory requirement of the Black Lung Benefits Act to “secure the payment” of any benefits imposes constraints that are typical of financial responsibility requirements. Any alternative that reduces regulatory costs by compromising a mine operator’s capacity to meet this obligation is prohibited by the Act.

Furthermore, the Department’s statutory obligation is the same to every miner. A disabled miner is a disabled miner, whether he worked for a large or small mining company. Any regulatory flexibility alternative that systematically reduced black lung benefits to employees of small mine operators would tend to compromise the policy objectives of the statute.

b. Case Law

Several of the proposed amendments, including those with most of the potential cost impacts, are codifications of decisions of courts of appeals. It is tempting to focus on provisions that have previously been upheld in only one or two circuits as potential areas for regulatory flexibility alternatives. Yet such an approach poses a dilemma. Scaling back a provision would be illegal in a circuit where the court of appeals has already upheld the provision. Any attempt to apply a regulatory flexibility alternative only in circuits where the court of appeals had not made such a decision, on the other hand, would be highly discriminatory and thus probably unconstitutional.

C. DEVELOPMENT OF ALTERNATIVES

The previous discussion has outlined general approaches and specific examples of regulatory flexibility alternatives, as well as applicable constraints. The issue for the final regulatory flexibility analysis will be to develop practicable regulatory flexibility alternatives or to demonstrate the infeasibility of doing so. Comments discussing feasible alternatives are requested.