

**MSHA's Proposed Rule on
Lowering Miners' Exposure to
Respirable Coal Mine Dust,
Including Continuous
Personal Dust Monitors**

The Proposed Rule is Part of MSHA's Strategy to End Black Lung

- The proposed rule is an important element in MSHA's Comprehensive Black Lung Initiative to "End Black Lung – Act Now!" which also includes enhanced enforcement, collaborative outreach, and education and training.
- The proposal combines prior regulatory actions addressing Lowering Coal Mine Dust Exposure, Single Sample, Plan Verification, and the Continuous Personal Dust Monitor (CPDM).
- This proposal would implement recommendations contained in the 1995 *NIOSH Criteria Document on Occupational Exposure to Respirable Coal Mine Dust* and the 1996 *Secretary of Labor's Dust Advisory Committee Report on the Elimination of Pneumoconiosis Among Coal Mine Workers*.
- The proposal would significantly improve health protection for coal miners.

Requirements of the Proposed Rule

1. Lower the existing concentration limit for respirable coal mine dust

- For underground and surface coal mines, from 2.0 milligrams of dust per cubic meter of air (mg/m^3) to $1.0 \text{ mg}/\text{m}^3$ over a 24-month phase-in period.
 - Of the 17,693 samples of miners' coal mine dust exposure submitted to MSHA by underground coal mine operators this year through August 31, 2010, the average concentration was $0.73 \text{ mg}/\text{m}^3$.
 - For surface miners, the average concentration submitted by mine operators was $0.46 \text{ mg}/\text{m}^3$.
- For intake air at underground mines and for Part 90 miners (coal miners who have evidence of the development of pneumoconiosis), from $1.0 \text{ mg}/\text{m}^3$ to $0.5 \text{ mg}/\text{m}^3$ six months after the effective date of the final rule.
 - Of the 2,804 MSHA samples of intake air collected this year through August 31, 2010, the average concentration was $0.14 \text{ mg}/\text{m}^3$.
- Establishes a weekly exposure limit when a CPDM is used for sampling occupations on the MMU and for Part 90 miners.

Requirements of the Proposed Rule

2. Require the use of the CPDM

- Over a 12- to 18-month period, phase in the use of the CPDM – a new dust sampling technology developed with support of industry, labor and government – that provides a direct, real-time display of respirable coal mine dust concentrations, as opposed to the current sampling device that takes days or weeks to obtain results on miners' exposure.
- Operators would use CPDMs to continuously monitor underground coal miners in occupations exposed to the highest dust concentrations and Part 90 miners. Current sampling of miners' dust exposure is infrequent.
- CPDMs would be optional at surface coal mines and for non-production areas of underground coal mines (such as outby areas).
- The CPDM would electronically store all respirable dust sampling data collected during the shift; this data would be sent electronically to MSHA.

Requirements of the Proposed Rule

3. Provide for the use of a single, full-shift sample to determine compliance

- Single, full-shift samples, collected by MSHA or the mine operator, would be used to determine compliance with respirable dust standards.
- Currently, multiple dust samples of different miners' exposures are averaged, with some samples indicating that miners are exposed to unhealthy dust levels far above the current 2.0 mg/m³ standard.
 - For example, under the existing standard, five measurements of: 3.4, 2.7, 2.6, .7, and .5 would result in an average of 1.98, which meets the 2.0 mg/m³ standard, although 3 individual measurements exceed the standard.

Requirements of the Proposed Rule

4. Address extended work shifts

- Require respirable dust sampling for the full shift a miner works, rather than a maximum of 8 hours.
- Under the existing rules, the dust sampling device is shut off after 8 hours even if the miner works much longer shifts in the dust.

Requirements of the Proposed Rule

5. Redefine normal production shifts

- Change the existing definition of normal production shift to require sampling at a production rate that is more representative of normal mining operations.
- Currently, the production level required for a valid dust sample is 50 percent of the average production, which results in respirable dust during sampling at levels far lower than those miners are normally exposed to.
- The proposal would require sampling when production is at least the average production over the last 30 production shifts.

Requirements of the Proposed Rule

6. Expand medical surveillance

- Add spirometry testing, occupational history, and symptom assessment to the chest x-ray examinations already required for underground coal miners.
- Extend medical surveillance to surface coal miners. (Extends transfer rights to surface coal miners, permitting the miner to elect to work in a lower dust atmosphere due to having the disease.)

Benefits and Costs of Proposed Rule

- Lowers miners' exposure to respirable coal mine dust, thus preventing Black Lung.
- Significant reductions in CWP, progressive massive fibrosis (the most severe stage of CWP), severe emphysema, and deaths from non-malignant respiratory disease.
- Estimated annualized benefits: \$99.1 – 196.8 million.
- Estimated annualized costs: \$40.4 – 44.5 million.

Estimated Compliance Costs

Requirements	Annualized Compliance Costs (\$Millions)
Underground Operators	
Engineering Controls	\$5.1 to \$9.1
Abatement Costs	\$0.3
Sampling	\$26.1
Other	\$4.2
Total Underground Coal	\$35.6 to \$39.7
Surface Operators	
Engineering Controls	\$0.3
Abatement Costs	\$0.0
Sampling	\$2.0
Other	\$2.4
Total Surface Coal	\$4.8
Total Coal Mining	\$40.4 – 44.5

* Totals may not sum due to rounding

Projected Benefits

Estimated Number of Adverse Health Effects Prevented Over 45 years¹					
Provisions of the Proposed Rule	CWP 1+	CWP 2+	PMF	Severe Emphysema	Deaths from NMRD
Lowering the Limit from 2.0 mg/m ³ to 1.0 mg/m ³ and Single Samples ²	1,301	985	641	556	106
Lowering the Limit from 2.0 mg/m ³ to 1.0 mg/m ³ , Single Samples, Extended Shift Sampling and Revising the Definition of Normal Production Shift ³	1,606	1,216	791	687	131

¹ Quantified benefits only. Does not include benefits from the other provisions of the proposed rule (e.g., sampling the DOs and Part 90 miners on every shift using the CPDM, expanded medical surveillance and extending the Part 90 option to surface miners) or from reductions in other diseases (e.g., silicosis and chronic bronchitis).

² Two provisions covered by MSHA's quantitative risk assessment.

³ Two provisions covered by MSHA's quantitative risk assessment plus two additional provisions.

Projected Monetized Benefits

Provisions of the Proposed Rule	Assumptions about the Timing of the Benefits	Monetized Benefits (\$Millions)
Lowering the Limit from 2.0 mg/m ³ to 1.0 mg/m ³ and Single Samples ¹	Benefits Begin after a 10-year Latency Period	\$99.1
	Benefits Begin Immediately	\$159.3
Lowering the Limit from 2.0 mg/m ³ to 1.0 mg/m ³ , Single Samples, Extended Shift Sampling and Revising the Definition of Normal Production Shift ²	Benefits Begin after a 10-year Latency Period	\$122.4
	Benefits Begin Immediately	\$196.8

¹ Two provisions covered by MSHA's quantitative risk assessment.

² Two provisions covered by MSHA's quantitative risk assessment plus two additional provisions.