

The Secretary * * * shall set standards which most adequately assure on the basis of the best available evidence that no miner will suffer material impairment of health or functional capacity even if such miner has regular exposure to the hazards dealt with by such standard for the period of his working life. (emphasis added)

Similarly, the Occupational Safety and Health Act, Public Law 51-956 section 6(b)(5) states:

The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has a regular exposure to the hazard dealt with by such a standard for the period of his working life. (emphasis added).

A 45-year "working life" (occupational lifetime) has conventionally been used in QRAs for occupational settings. For example, MSHA used a 45-year lifetime in its risk assessment for diesel particulate (66 FR 5526 and 66 FR 5706). Similarly, OSHA has used a working-life of 45 years in its QRAs to support health standards (see, for example, Benzene (52 FR 34460); Bloodborne Pathogens (65 FR 64004); Methylene Chloride (62 FR 1494); and 1,3-Butadiene, (61 FR 567467)). To the extent the proportion of miners' careers are shorter than 45 years, the actual benefits may be lower.

iv. Due to the progressive nature of CWP even after occupational exposure has stopped (see Health Effects Section), the best estimate of the occupational-lifetime benefit of preventing respirable coal mine dust overexposures is based on the expected lifetime for all American males, 73 years of age.³¹ In the future, the extent to which coal miners have a greater life expectancy, the realized benefits would increase. For example, since females have a greater life expectancy than males, expected benefits will increase if the proportion of female miners increases substantially in the future.

v. Applicable dust standards for RB-DAs are determined separately from the applicable dust standard shared by DOs and NDOs, even though they are on the same MMU. Since RB-DAs are often exposed to higher quartz concentrations than other miners on the same MMU, frequently, the RB-DA's applicable dust standard is lower than that for other miners working on the same MMU. Therefore, RB-DAs have their own percentage that exhibit a pattern of

recurrent overexposures. Roofbolter DA MSHA samples were defined as samples with entity code 900-0 through 999-9 and as a type 03 sample. Some MSHA RB-DA samples may have been incorrectly coded as a type 02 sample—an occasional problem with the data. Those incorrectly coded samples would not have been included in the QRA and therefore the number of RB-DAs with a pattern of recurrent overexposures may be underestimated.

vi. Although the effect cannot be readily quantified, these rules would also reduce the cumulative exposure to respirable coal mine dust for those miners working on MMUs currently not exhibiting patterns of recurrent overexposures for either DOs and/or RB-DAs. Thus, the health benefit for all miners is expected to be greater than estimated for the sub-populations of miners in the QRA.

MSHA has taken steps in the QRA to conduct a balanced analysis using available data. The data in the QRA have limitations, preventing MSHA from fully quantifying the frequency and average magnitude of overexposure of respirable coal mine dust for the entire population of underground coal miners whose cumulative exposure to respirable coal mine dust would be reduced due to the proposed rules. To the extent that MSHA has underestimated overexposure levels among underground coal miners, it has underestimated the reduction in risk for CWP and the number of prevented cases of CWP that would be realized through these proposed rules, over an occupational lifetime (For further discussion, see Benefits section of PREA and preamble).

VIII. Feasibility Issues

A. Technological Feasibility

MSHA believes that the plan verification rule would be technologically feasible for the mining industry. An agency must show that modern technology has at least conceived some industrial strategies or devices that are likely to be capable of meeting the standard, and which industry is generally capable of adopting. *American Iron and Steel Institute v. OSHA*, (AISI-II) 939 F.2d 975, 980 (D.C. Cir. 1991); *American Iron and Steel Institute v. OSHA*, (AISI-I) 577 F.2d 825 (3d Cir. 1978) at 832-835; and *Industrial Union Dep't., AFL-CIO v. Hodgson*, 499 F.2d 467,478 (D.C. Cir. 1974).

In designing the plan verification rule, MSHA has taken into account its experience and that of the operators to ensure that the rule provides additional

protection from occupational exposure to respirable coal mine dust using current compliance technology (while encouraging technological improvements). For this reason, MSHA believes the proposed plan verification rule is technologically feasible. MSHA requires mine operators to utilize all feasible engineering or environmental controls, which are specified in the mine ventilation plan, to maintain concentrations of respirable dust in the work environment of MMUs at or below the applicable dust standard. Mine operators therefore would not be required to implement engineering or environmental controls that were not technologically feasible.

B. Economic Feasibility

MSHA believes that the proposed Plan verification rule would be economically feasible for the underground coal mining industry. The proposed Plan verification rule would result in net compliance cost savings of approximately \$2.1 million yearly. (Although implementing the proposed Plan verification rule would cost about \$4.5 million yearly, there would be offsetting yearly savings of about \$3.8 million from reduced citations and the elimination of operator abatement sampling; \$2.2 million from the elimination of operator bi-monthly sampling; \$0.3 million resulting from a reduction in MSHA-ordered mine closures; and \$0.3 million from reduced payout by operators for Black Lung cases). Underground coal operators would also obtain a yearly cost savings of approximately \$3.0 million in reduced penalty costs associated with the reduction in operator citations arising from the proposed plan verification rule. The proposed plan verification rule would therefore provide a total yearly cost savings (including net reduced penalty costs) of \$5.1 million to the underground coal mining industry.

IX. Preliminary Regulatory Economic Analysis

A. Costs and Benefits: Executive Order 12866

1. Compliance Costs

The proposed plan verification rule would impose a yearly net compliance cost savings to underground coal operators of about \$2.1 million. Although implementing the proposed plan verification rule would cost about \$4.5 million yearly, there would be offsetting yearly savings of \$6.6 million. The cost savings consist of: \$3.8 million due to reduced citations and the elimination of operator abatement

³¹ Conditional on their having reached 20 years of age (calculated from: the U.S. Census March 1997, Table 18; U.S. Census March 1997, Table 11).