

MSHA is not aware of its use by any operator.

Since establishment of the first comprehensive dust standards in 1969, the implementation of ventilation plans by mine operators and their enforcement by MSHA has had a significant impact on control of dust levels in underground coal mines. For example, based on federal mine personnel sampling results, the average dust concentration in the environment of a continuous miner operator (occupation code—036) has been reduced by 87 percent over the past 32 years, from 7.7 mg/m³ to approximately 1.0 mg/m³. This accounts for the significant decline in the percentage of operator continuous miner designated occupation (DO) samples with concentrations of 2.1 mg/m³ or higher, from 49 percent (over 32,000 samples/shifts) in 1971, to 7 percent (over 1,250 samples/shifts) during the first three quarters of 2002. Analysis of all valid operator DO samples collected during the same time period as above indicates that in 1971, 53,463 (44 percent) of the 122,404 shifts sampled, were at or above 2.1 mg/m³, compared to 1,450 (7 percent) of the 19,336 shifts sampled in 2002 (MSHA, DO Samples by Calendar Year, 2002). Despite this progress, MSHA has found evidence that a significant number of overexposures still occur on the shifts sampled during which the approved dust control parameters are operating at or above approved levels. This evidence suggests that it is highly probable that some miners are overexposed to respirable dust on shifts not sampled by either the operator or by MSHA. In addition, recent medical surveillance data suggests that miners continue to be at risk of developing simple coal workers' pneumoconiosis (CWP), progressive massive fibrosis (PMF), and silicosis (Elam, April 1999).

Two expert panels, that reviewed the federal program designed to prevent pneumoconiosis among coal miners, found that certain aspects of the current respirable dust program limit MSHA's ability to determine the adequacy of the dust control parameters under typical mining conditions. Both the *Coal Mine Respirable Dust Task Group*, (Task Group) an interagency task group established in 1991 by the Assistant Secretary for Mine Safety and Health, and the *Advisory Committee on the Elimination of Pneumoconiosis Among Coal Mine Workers*, (Dust Advisory Committee) established in 1995 by the Secretary of Labor, considered all aspects of the respirable coal mine dust control program and made recommendations for improvement. In

addition, in November 1995, NIOSH issued a criteria document that contained recommendations to improve miner health protections.

D. Coal Mine Respirable Dust Task Group

In response to concerns about the Federal coal mine dust program (MSHA, 1992), MSHA's Task Group undertook an extensive review of the program to control respirable coal mine dust and made recommendations to improve the program in 1991. As part of that review, MSHA developed a special respirable dust "spot inspection program" (SIP). This program was designed to provide the Agency and the Task Group with information on the dust levels to which underground miners are typically exposed.

The Task Group found that MSHA's current program did not promote the development and implementation of quality plans. Based on its review of a representative number of dust control plans, the Task Group found that some plans lacked specificity or did not include all the dust control parameters actually used. For example, the plans for three major underground coal mines listed the air quantity, the primary means of controlling concentrations of respirable coal mine dust, to be 18,000 cubic feet per minute (cfm) in the mining section. The actual quantities measured by MSHA samples at these mines during the SIP varied from 40,000 cfm to over 120,000 cfm.

Based on a review of MSHA Form 2000-86 (Revised), *Respirable Dust Sampling and Monitoring Data*, similar differences were found between air quantities specified in approved ventilation plans and the levels observed at a number of longwall MMUs inspected in 1999. For example, 20 of the 47 longwall MMUs were using significantly more air than specified in the ventilation plan (MSHA, September 1999). Under these circumstances, it would be impossible to assess whether the air volume specified in the plan was adequate to maintain dust concentrations at or below the applicable dust standard. It should be noted that air quantities, air velocities, water spray pressures, and other control parameters, specified in the plan are considered to be minimum requirements and MSHA encourages mine operators to exceed their plan parameters, but only after the levels specified in the plan have been shown to be effective under the conditions in effect during sampling. In addition, a lack of specificity in some plans made it difficult for MSHA samples to determine whether the operator was

complying with the approved plan. Although several plans indicated that the mining equipment was to be provided with water sprays, the plan did not specify the location of the sprays or the water pressure at the spray nozzle.

Currently, MSHA relies on information provided by the operator to determine at what production level the plan should be evaluated. No production records are required for each MMU. Although operators must submit production data on a quarterly basis, the data is compiled for the entire mine. In addition, these quarterly reports provide information on the amount of clean coal produced, which are much lower than the tonnage of total material produced, and are not useful for establishing what constitutes "normal production shifts" for sampling purposes.

The Task Group determined that the use of low production levels for evaluating the effectiveness of dust control parameters can result in marginal or inadequate plans. Therefore, the Task Group recommended that MSHA require mine ventilation plans to be effective under typical mining conditions. A more detailed discussion of the impact of production on the quality of dust control parameters specified in mine ventilation plans is contained in sections III.C.1. and IV.B. of this preamble.

A survey conducted by MSHA in August of 2002 found that 48 percent of producing MMUs worked at least a 9-hour shift. The Task Group concluded that current regulations limiting the duration of sampling to eight hours do not provide for adequate assessment of respirable dust exposure during nontraditional shifts of more than eight hours.

Implementation of the Task Group recommendations would have required regulatory change. The effort to implement these changes was suspended pending the deliberations and recommendations of the Advisory Committee on the Elimination of Pneumoconiosis Among Coal Mine Workers, which was convened in 1995.

E. NIOSH Criteria Document

On November 7, 1995, MSHA received the document, *Criteria for a Recommended Standard: Occupational Exposures to Respirable Coal Mine Dust*, (Criteria Document) from the National Institute for Occupational Safety and Health (NIOSH). That document contains recommendations to minimize the health risks encountered by surface and underground coal miners due to their occupational exposure to respirable coal mine dust and