

different operating conditions of production.

Under the proposed plan verification procedures, mine operators will be required to verify through sampling the effectiveness of the dust controls specified in the ventilation plan prior to approval of that plan by the district manager. Sampling would occur when production is at or above the VPL specified in the plan and using only those control parameters and other measures listed in the plan. The sampling pumps must be turned on upon arrival on the MMU and remain operational during the entire production shift. The pumps must be turned off upon leaving the MMU. Samples would be collected on multiple occupations which are specified in proposed § 70.206. All verification samples must be transmitted to MSHA. However, no citations would be issued to mine operators if the verification sample results show that the applicable dust standard has been exceeded. Operators would be cited only if they fail to take steps to determine the cause and take corrective action to eliminate the overexposure. The agency would approve a plan only when a sufficient number of verification samples demonstrate, at a high level of confidence, that the plan is effective at production levels at or above the VPL.

Unlike the existing program, this proposed rule would allow certain longwall and other operations to use either approved PAPRs, administrative controls, or both, to supplement engineering or environmental controls if the mine operator is unable to verify the ventilation plan. This will be permitted only after the Administrator for Coal Mine Safety and Health determines that the operator has exhausted all feasible engineering or environmental controls. District managers also may allow mine operators to use PAPRs to achieve compliance with the applicable dust standard when unusual operating conditions are encountered briefly and intermittently and the operator believes that the approved plan parameters will not adequately protect all miners from overexposure. The period of time when PAPRs may be used cannot exceed 30 calendar days under this proposed rule. An example of when such approval may be granted is when an operator periodically must mine through rock strata with high quartz content.

Finally, under this proposed rule, mine operators also would be required to sample each DO and occupation using PAPRs or administrative controls at least once every three months to evaluate the continued adequacy of the approved plan parameters. As with

verification samples, operators would only be cited if they fail to take corrective action to eliminate any overexposure identified through such sampling.

D. Hierarchy of Dust Controls

1. Primacy of Engineering Controls

Consistent with the Mine Act, engineering or environmental controls have been the principal method used for preventing or minimizing miners' exposure to both primary and secondary dust sources in the workplace over the past 30 years. Engineering controls that are able to manage the amount of dust throughout the work environment give reasonable assurance that all miners in the area will be adequately protected. Well-designed engineering or environmental controls provide consistent and reliable protection to all workers because they are not dependent upon constant human supervision or intervention, except for the periodic checks, to ensure that they are functioning as intended. Under this proposed rule, operators would be required to utilize, on each production shift, all engineering or environmental controls as specified in their mine ventilation plans. These controls will maintain concentrations of respirable dust in the work environment of MMUs at or below the applicable dust standard. Engineering or environmental controls include all methods that control the level of respirable dust by reducing dust generation (e.g., machine parameters) or by suppressing (e.g., water sprays, wetting agents, foams, water infusion, etc.), diluting (e.g., ventilation), capturing (e.g., dust collectors), or diverting (e.g., shearer clearer, passive barriers, etc.) the dust being generated by the mining process.

The importance of using engineering or environmental controls was recognized by the Dust Advisory Committee and by NIOSH in *Occupational Exposure to Respirable Coal Mine Dust* (NIOSH, 1995). NIOSH recommended that such controls must continue to be relied upon as the primary means of protecting coal miners. The primacy of engineering or environmental controls would be preserved under this proposed rule. The proposed rule requires a mine operator to utilize all feasible engineering or environmental controls, specified in the approved ventilation plan, to reduce concentrations of respirable dust to a level at or below the applicable dust standard.

2. Administrative Controls

Administrative controls are another method of avoiding overexposure. Administrative controls refer to work practices that reduce a miner's daily exposure to respirable dust hazards by altering the way in which work is performed. They consist of such actions as rotation of miners to areas having lower dust concentrations, rescheduling of tasks, and modifying work activities. The Task Group found that administrative controls were used increasingly, even when it was feasible to implement additional engineering or environmental controls. The use of administrative controls was found to be increasing at mines employing longwall mining systems.

The most frequent administrative control in use consisted of restricting the activities of miners required to work downwind of the longwall shearer operator, the occupation designated as 044 by MSHA. This particular form of administrative control was in use at some of the 51 longwall MMUs that were operating on October 28, 1999. MSHA has observed the use of this particular administrative control, even after changing the location of the DO from the 044 to the 060 occupation—the miner who works nearest the return air-side of the longwall working face. Unlike engineering or environmental controls, to be effective, administrative controls rely on the ability of miners to follow specified procedures. However, difficulty in ensuring that miners adhere to the administrative controls, labor/management agreements, and limitations on the number of qualified miners capable of handling specific tasks may limit the use and effectiveness of such controls.

The Dust Advisory Committee Report stated that the use of administrative controls does not reduce the operator's responsibility to maintain ambient dust levels in active workings at or below the applicable dust standard. However, the Dust Advisory Committee noted that "while not a substitute for engineering controls, administrative controls, which restrict the amount of time that miners spend in an area with uniform exposure level, can result in lower personal exposures (MSHA, 1996)."

3. Limitations of Engineering Controls

It is MSHA's position that technology is generally available to control respirable dust to, or below, the applicable dust standard at MMUs employing continuous and conventional methods of mining. However, where unusual or adverse conditions are encountered it is possible that available