

procedures for determining the average quartz percentage used to calculate the applicable dust standard. Only the results of MSHA samples would be used to establish the applicable dust standard. The quartz results of the three most recent valid MSHA samples would be averaged and the resultant percentage would be used to set the new applicable dust standard. However, if an entity is already on a reduced standard when these revised procedures become effective, a new applicable dust standard will be established by averaging the results of the first two MSHA samples taken under the revised procedures with the quartz percentage associated with the reduced standard in effect. If fewer than two MSHA samples are taken, the existing applicable dust standard will continue to remain effect.

Application of the revised procedures will result in the setting of reduced standards that will (1) more accurately represent the quartz percentage of the respirable dust in the environment at the time of sampling; (2) reflect the dynamics of the mining process and the changing geologic conditions of the mine strata; and (3) continue to protect miners over multiple shifts.

Under the proposed rule, MSHA would also begin reporting the quartz content to the nearest tenth of a percent, instead of the current practice of truncating results to the nearest full percent. This is more protective for the miner because it will permit MSHA to also set reduced standards at such levels as 1.1 mg/m³, 1.4 mg/m³, 1.6 mg/m³, 1.8 mg/m³, and 1.9 mg/m³. Setting these particular standards was not mathematically possible using the above formula due to the practice of truncating the average quartz percentage.

Section 70.201 Sampling; General and Technical Requirements

MSHA is proposing to modify the general requirements for operator sampling under existing § 70.201. The proposed rule would remove existing paragraph (d), revise and redesignate (b) as (c) and existing (c) as (g), revise paragraph (a), and add new (b), (d), (e), (f), (h), and (i).

To minimize repetition and to streamline the proposed requirements, paragraph (a) would be modified by removing the reference to part 74 approval (Coal Mine Dust Personal Sampler Units), and replacing it with "approved sampling device," as defined under revised § 70.2. Respirable dust sampling under this proposed rule could also be conducted with sampling devices that can give a continuous readout of dust concentrations provided that the measured concentration can be

converted to an equivalent concentration as measured with another sampling device approved under part 74 of this title.

Proposed new paragraph (b) would retain the requirements in existing § 70.202(a) and (b) that sampling required under this part be conducted by an individual certified by MSHA and the manner by which a person would be certified. Therefore, existing § 70.202(a), (b), and (c) would be removed.

While the sampling device would continue to be worn or carried to and from the MMU as required by existing § 70.201(b), proposed § 70.201(c), the existing requirement that sampling devices be operated portal-to-portal and for a period no longer than eight hours would be removed. Instead, since the objective is to assess the adequacy of the dust control parameters in effect in each MMU under proposed § 70.206 and § 70.215, except when using a personal continuous dust monitor (PCDM) under proposed § 70.220, the sampling device would be operated only during the period that the production crew spends in the MMU. That is, under proposed § 70.206 the sampling device would (1) be turned "ON" when the production crew arrives at the MMU, regardless if any actual mining is taking place; (2) remain operational during the entire shift that the production crew remains in the MMU, regardless of the number of hours worked; and (3) be turned "OFF" at the end of the shift as the production crew exits the MMU.

On the other hand, if using a PCDM under proposed § 70.220, the sampling device would be operated portal-to-portal and would remain operational during the entire work shift or for 12 hours, whichever time is less, to ensure that the miner's entire work shift is controlled. Because the use of a PCDM will permit the operator to make adjustments in administrative controls, without MSHA approval, at anytime during the work shift, the duration of sampling is not limited to the time period the production crew spends in the MMU as discussed in the previous paragraph but, instead, must be carried out over the entire work shift to ensure that each miner using a PCDM was not personally overexposed. Simply stated, the PCDM would be turned "ON" when the miner enters the mine and remain operational while traveling to the MMU, during the entire time period spent working in the MMU, and while traveling back to the mine entrance, at which time the device would be turned "OFF." Since most non-traditional work shifts in underground coal mines are less than 12 hours in length, the PCDM currently under development is being

designed with sufficient battery capacity for one 12-hr work shift of operation.

It should be pointed out that the duration of MSHA sample collection will continue to be limited to 480 minutes. The sampling device will be operated portal-to-portal and remain operational during the entire shift or for 8 hours, whichever time is less.

Consistent with accepted industrial hygiene practice, proposed paragraph (d) will require the operator to use control filters when verifying the adequacy of the plan parameters under proposed § 70.206 or § 70.220(c). A control filter is an unexposed filter of the same design as the filter cassette used for sampling, that is pre- and post-weighted on the same day as the filter cassettes used for verification sampling. MSHA first began using control filters in its enforcement program in May 1998 and continues this practice today. The reason for requiring their use by operators is to improve the accuracy in making weight-gain measurements of the exposed filter cassettes by eliminating the effect of differences in pre- and post-exposure laboratory conditions, or changes introduced during storage and handling of the filter cassettes. The control filter will be used to adjust the weight gain obtained on each exposed filter by subtracting any change in the weight of the control filter from the change in weight of each exposed filter. This is especially important since the filter cassettes to be used by operators will be pre- and post-weighted to the nearest microgram (0.001 mg). The other modification to the procedures for processing operator samples will be to discontinue the practice of truncating (to 0.1 mg) the recorded weights used in calculating dust concentrations. This means that Mine Safety Appliances Company (MSA), which upgraded its weighing equipment in 1996 and uses the same balance as MSHA's Coal Dust Processing Laboratory, will be permitted to follow MSHA and use all significant digits associated with the weighing capability of the balance (0.001 mg) when pre-weighing operator dust cassettes. These changes will enhance the proposed process of verifying the adequacy of plan parameters. This will also eliminate the need for operators to sample multiple shifts in order to obtain sufficient dust mass on the collection filter for quartz analysis. Since the use of a control filter adjusts for differences that may exist in laboratory conditions on the days of pre- and post-weighing, it is no longer necessary to pre- and post-weigh the filter cassettes in the same laboratory. To ensure the precision and accuracy of the pre-weight of filters