

Section 70.210 Through 70.212*Use of Powered Air-Purifying Respirators (PAPRs)*

These sections would establish the requirements for using PAPRs as a supplementary control to maintain the personal work environment of the affected miners at a safe exposure level when MSHA has determined that further reduction in respirable dust concentrations cannot be achieved using all feasible engineering or environmental controls or under special circumstances.

Section 70.210 Powered Air-Purifying Respirators (PAPRs); Requirements for Approval

If the operator chooses to use PAPRs as a supplementary control measure, the operator must submit a revision to the ventilation plan to the district manager within five days of receipt of MSHA's written approval in accordance with proposed § 70.209(b). The proposed revision would specify the feasible engineering controls that are capable of (1) reducing the concentration of respirable dust as low as achievable in every occupational environment where a PAPR is required to be worn, and (2) maintaining other occupational environments in the MMU at or below the verification limits. The proposed revision must reflect the engineering controls that were in use at the time that the determination was made by MSHA to permit the use of supplementary controls.

In addition to specifying all feasible engineering controls to be used, proposed paragraph (a)(2) would require the operator to develop a written PAPR protection program which meets the requirements of § 72.710 and incorporates the following information: (1) The protection factor as determined in accordance with proposed § 70.2 that would be assigned to the affected MMU; and (2) the specific occupation(s), work locations or tasks where PAPRs must be worn by the affected miners. A model PAPR protection program to guide the operator in developing a mine-specific program that complies with the requirements of this section is described in Appendix B. The district manager may require the operator to modify the PAPR protection program before granting provisional approval of the proposed plan revision.

Also, consistent with the NIOSH Criteria Document and section 101(a)(7) of the Mine Act, proposed paragraph (a)(3) would require the operator to post warning signs with the statement "RESPIRATORY PROTECTION REQUIRED IN THIS AREA" in locations

where PAPRs must be worn. Since the presence of excessive dust concentrations is not readily discernible, MSHA believes that the use of warning signs is necessary to protect miners. The posting of warning signs is an appropriate vehicle to inform or remind miners, regardless of their familiarity with the workplace environment, that they are entering a high dust area where the use of PAPRs is mandatory. The Agency recognizes that § 75.370(e) requires that operators instruct persons affected by a revision to the ventilation plan prior to implementation. Section 75.370(f)(3) also requires approved revisions to be posted on the mine bulletin board for the period that the plan is in effect. MSHA is soliciting comments on whether it should require the posting of warning signs when PAPRs must be worn, or should it be optional and left to the discretion of the operator.

Proposed paragraph (b) requires the operator to verify, in accordance with proposed § 70.206(b) through (e), the adequacy of the revised plan parameters, incorporating the use of PAPRs, within 30 calendar days of obtaining provisional approval from the district manager. Accordingly, the operator would be required to collect verification samples in the environment of (1) the occupation(s) where PAPRs must be worn by miners assigned to work in those job positions, (2) the DO, and/or (3) other occupation(s) that may be designated by the district manager.

Section 70.211 Powered Air-Purifying Respirators (PAPRs); Approval and Conditions for Continued Use; Revocation of Approval

This proposed section establishes the criteria that the district manager would use to determine whether the operator's proposed plan revision incorporating the use of PAPRs should be approved. As previously discussed under proposed § 70.207, approval of the proposed revision would depend on the results of verification sampling and the operating conditions in effect for each sample.

The district manager would approve the operator's revised plan when: (1) The amount of material produced is at or above the VPL, the parameters and other measures in place during verification sampling do not exceed 115% of the quantities specified in the plan, and no equivalent concentration measurement exceeds the critical values listed in Table 70-1 that correspond to the number of shifts sampled; and (2) the revision incorporates the dust control parameters used during verification sampling.

To account for the expected workplace level of respiratory protection provided the wearer of the PAPR, the equivalent concentration measurement must be adjusted further in accordance with § 70.2. This requires the equivalent concentration to be divided by the protection factor (PF) specified in the PAPR protection program for the particular mechanized mining unit (MMU). The PF represents the minimum reduction in dust concentration that a respirator would be expected to provide. In the absence of a direct measure of the dust concentration inside the PAPR (in the miner's personal work environment) while under the conditions of the workplace, the adjusted equivalent concentration represents a surrogate measure of the respirable dust concentration inside the PAPR facepiece to which the wearer is exposed. Since the PFs assigned to MMUs under this proposed rule incorporate a margin of safety, the resulting equivalent concentration measurement represents a conservative estimate of the dust concentration in the miner's breathing zone.

For example, assume that a MMU, which was assigned a PF = 3, was sampled one shift and the concentration measurement for the sampled occupation under a PAPR protection program is 3.54 mg/m³ for respirable coal mine dust and 174 µg/m³ for respirable quartz dust. Under the definition of "equivalent concentration," these measurements are divided by 3, which yields an equivalent concentration of 1.18 mg/m³ [3.54 mg/m³/3] for respirable coal mine dust and 58 µg/m³ [174 µg/m³/3] for respirable quartz dust to which the miner assigned to that occupation is exposed. If no other valid equivalent concentration measurement obtained on one shift exceeds 1.71 mg/m³ or 87 µg/m³ according to Table 70-1, the district manager would approve the revised plan incorporating the use of PAPRs.

MSHA believes that this strategy provides far more health protection to miners than is available under current regulations, which only requires operators to make available approved respiratory equipment to miners when exposed to excessive dust concentrations. There is no requirement that miners actually wear the respirator when issued. Under the proposed rule, not only must PAPRs be worn at all times but must also conform to specific requirements consistent with an acceptable respiratory protection program.

Proposed paragraph (b) establishes the requirements for the continued use of