Chapter 15

Mine Safety and Health Administration (MSHA)
Respirable Dust Proposed Rules

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On October 19, 2010, the Mine Safety and Health Administration (MSHA) published its long-anticipated proposed rule on respirable coal mine dust.\(^3\) The proposed regulations are built around a new sampling methodology, Continuous Personal Dust Monitors (CPDM), a sampling tool that provides immediate data rather than the gravimetric sampling methodology which used filter weights and subsequent laboratory analysis to determine average exposure levels.\(^4\) The CPDM will provide continuous measurement and data storage based on actual shift-time sampling as compared to an eight-hour shift sample provided by the gravimetric sampling device.

The proposed rule does not acknowledge the traditional hierarchy of controls, including respiratory protection, as a strategy to avoid compliance issues. Engineering and administrative controls are limited in the mining environment and this decision by MSHA will have a significant impact on the mining industry.

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\(^3\) 75 Fed. Reg. 64412 \textit{et seq.}

\(^4\) \textit{See} 74 Fed. Reg. 2915 \textit{et seq.}
MSHA’s proposal would halve the respirable coal mine dust exposure limit for miners from the current 2.0 mg/m\(^3\) to 1.0 mg/m\(^3\). In addition, the proposed rule allows MSHA to determine compliance based upon a single shift sample taken under either the mine operator’s or MSHA’s sampling programs. The proposal will base compliance determinations on the data which may carry with it a rebuttable presumption that the alleged violation is significant and substantial.\(^5\)

The proposed standard incorporates MSHA’s plan approval authority as a cornerstone of the enforcement process. Mine operators are required to have an approved written plan for use of the required CPDM device. This performance plan must ensure that no miner working on the mechanized mining unit (MMU) will be exposed to respirable coal dust in excess of the applicable standard. In addition, the proposed standard mandates that violations for over-exposure of the applicable limits cannot be abated until the MSHA district manager approves changes in the mine’s approved ventilation plan.

This chapter will describe the significant provisions of the proposed standard and the concerns raised by the commentators to those provisions. The focus is primarily on how the proposed standard impacts underground coal mines. The chapter also analyzes several legal issues presented by the proposed rule. The impact of MSHA’s rejection of the widely supported strategy of utilizing a hierarchy of controls to reduce exposures is one such issue. In addition, this chapter will examine the impact of decisions under the existing respirable coal dust rule relating to the presumption that over-exposure violations are presumptively “significant and substantial” (S&S)\(^6\). The issue of whether excessive exposure violations will be presumptively “S&S” have increased importance in light of MSHA’s recent emphasis on

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\(^6\) 30 U.S.C. § 814(d) requires that an inspector determine whether a violation is of such nature as could significantly and substantially contribute to the cause and effect of a mine safety or health hazard.
enforcement of Section 104(e) — pattern of violations — of the Federal Mine Safety and Health Act, 30 U.S.C. Section 814(e).

Issues regarding whether the promulgation of the proposed rule meets applicable legal standards are not within the scope of this chapter.

§ 15.02. Lowering Permissible Concentrations of Respirable Dust and Weekly Exposure Limits.


The proposed standard would reduce the concentration limit to one milligram per cubic meter of air \([1.0 \text{ mg/m}^3]\) within 24 months of the effective date of the new standard. The proposed standard requires an incremental reduction in respirable dust over that period. The concentration limit would be 1.7 mg/m\(^3\) six months after the effective date of the standard and 1.5 mg/m\(^3\) 12 months after the effective date.\(^7\) The 1.0 mg/m\(^3\) standard would be effective 24 months from the effective date.\(^8\)

Provisions in the proposed standard relating to the presence of quartz will have the effect of reducing the permissible concentration of respirable dust below 1.0 mg/m\(^3\) in many instances. Proposed Section 70.101 requires that the concentration of respirable quartz dust be maintained at or below 1.0 mg/m\(^3\) (100 micrograms per cubic meter of air or µg/m\(^3\)). If the permissible quartz level is exceeded, the 1.0 mg/m\(^3\) respirable dust limit is reduced by dividing the percent of quartz into the number ten and subtracting that number from the 1.0 mg/m\(^3\) standard.\(^9\) In addition, the definition of “equivalent concentration” proposed in the new rule will result in raising final concentrations whenever samples are taken on an extended shift. For samples taken on any shift exceeding eight hours in duration, the proposed standard requires that the measured concentration of respirable dust be “normalized” to an equivalent eight-hour Mining Research Establishment

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\(^{7}\) Proposed § 70.100, 75 Fed. Reg. 64492.

\(^{8}\) Id. The proposal would also lower the current permissible concentration of respirable dust in intake airways to 05. mg/m\(^3\) six months after the effective date of the standard.

\(^{9}\) Proposed § 70.101, 75 Fed. Reg. 64492.
(MRE) concentration.\textsuperscript{10} According to the example provided in the proposal, a measured concentration of 1.5 mg on a nine-hour shift sample would yield an “equivalent concentration” of 2.16 mg/m\textsuperscript{3}.\textsuperscript{11}

In addition, MSHA has adopted two new definitions which will further adversely impact a mine operator’s ability to remain in compliance with the new respirable dust concentration standards. “Representative samples” are defined thus:

Respirable dust samples that reflect typical dust concentration levels and normal mining activity in the active workings during which the amount of material produced is equivalent to a normal production shift.\textsuperscript{12}

MSHA has also defined the term “normal production shift”:

A production shift during which the amount of material produced by an MMU is at least equal to the average production recorded by the operator for the most recent 30 production shifts or for all productions shifts if fewer than 30 shifts of production are available.\textsuperscript{13}

Although these two definitions seem facially neutral, in application they effectively void all designated occupation respirable dust samples taken using the existing gravimetric cyclone device (“CMDPSU”) on shifts where production is less than the running 30-day average. MSHA has specifically stated that all designated occupation samples taken with CMDPSU may be voided by MSHA “[i]f a normal production shift is not achieved . . . .”\textsuperscript{14}

Despite these obvious changes, MSHA asserts in the preamble to the proposed rule that “MSHA and mine operator data indicate, that under the

\textsuperscript{10} Proposed § 70.2, 75 Fed. Reg. 64485. See definition of “equivalent concentration.”
\textsuperscript{11} 75 Fed. Reg. 64417.
\textsuperscript{12} Proposed § 70.2, 75 Fed. Reg. 64485. See definition of “representative samples.”
\textsuperscript{13} Proposed § 70.2, 75 Fed. Reg. 64485.
\textsuperscript{14} Proposed § 70.207(d), 75 Fed. Reg. 64488.
existing sampling program, the majority of miners’ exposure are at or below the limits in the proposed rule.”  


The proposal includes two new terms and a new compliance benchmark which are applicable when a CPDM is utilized to sample occupations.

The “weekly accumulated exposure” (WAE) is defined as the maximum amount of accumulated exposure to respirable coal mine dust permitted for an occupation during a 40-hour work week. This limit is determined by multiplying the daily individual end-of-shift equivalent concentration measurement by 8 hours and then adding all of the daily accumulated exposures together for the Sunday through Saturday period.

The “weekly permissible accumulated exposure” (WPAE) is defined as the maximum amount of accumulated exposure to respirable coal mine dust for a given occupation. MSHA has stated:

MSHA believes that determining the WAE for an occupation in the manner proposed would cause mine operators to closely monitor the daily accumulated exposure of each occupation sampled during the week. If the accumulated exposure approaches the weekly permissible exposure (WPAE) . . . , when additional shifts remain to be worked, it would indicate that the average equivalent concentration is getting close to exceeding the applicable standard. The operator may then need to take action to avoid overexposing the miners assigned to that occupation.

The weekly permissible accumulated exposure establishes a new compliance benchmark for mines using the continuous personal dust monitors. Section 70.208(e) explicitly states “[n]o weekly accumulated exposure . . . “

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exposure shall exceed the weekly permissible accumulated exposure. Thus mine operators must take immediate action to lower the respirable dust exposure if a single continuous personal dust monitor sample exceeds the permissible standard, or risk a second violation at the end of the work week.


Comments from the National Mining Association (NMA) and others in the mining community point out that nationally, under current conditions and standards, the incidence of coal workers’ pneumoconiosis (CWP) is declining dramatically and is approaching the background rate of the non-exposed, general population. According to the NMA, the data from the National Institute of Occupation Safety and Health (NIOSH) enhanced x-ray surveillance program demonstrates that limited areas of West Virginia, Kentucky and Virginia provide the only underlying support for the proposed rules. Excessive silica exposure in these limited areas and coal rank, not coal dust exposure nationwide, accounts for the increased numbers of miners with coal workers’ pneumoconiosis.

The National Mining Association also noted that MSHA’s quantitative risk analysis (QRA) had serious limitations and was unsuitable for use in risk management decisions. Among the issues raised was the fact that the quantitative risk analysis had no hazard identification section, contained an irrelevant exposure assessment, and did not discuss or quantify any causal exposure-response relationship.

The NMA also strongly questioned the ability of the new continuous personal dust monitor to provide accurate data for enforcement purposes.

19 When the WPAE is exceeded, § 70.208(f) requires that the mine operator make approved respiratory equipment available to the exposed miners, make changes to lower the respirable dust concentration, submit a revised ventilation plan to the district manager for approval, review the CPDM Performance Plan, and record the changes made to reduce the respirable dust concentration in the record book maintained pursuant to § 75.363.
NMA asserts that the CPDM needs additional development and improvement to provide accurate results for enforcement purposes pointing out that samples taken simultaneously by the CMDPSU and the continuous personal dust monitor varied greatly.

Both the National Mining Association and Walters Resources commented that the reduction in the permissible concentration, when coupled with the effects of quartz and extended shifts, would result in an overly aggressive standard which could not be achieved or effectively enforced.

§ 15.03. Continuous Personal Dust Monitors (CPDM).

[1] — Sampling Using CPDMs as Proposed by MSHA.

The proposed standard allows mines to continue to use the CMDPSU device for all sampling for 12 months following the effective date of the standard.\(^\text{20}\) Thereafter, all “designated occupation” sampling must be performed using the new continuous personal dust monitor units.\(^\text{21}\) Mine operators may continue to use the CMDPSU device for “other designated occupations” and for sampling “designated areas” associated with an active mechanized mining unit (MMU) sampling for 18 months following the effective date of the new standard. Where a “designated area” sampling location is not associated with a mechanized mining unit, mine operators can use either the continuous personal dust monitor or the CMDPSU device for all sampling.\(^\text{22}\)

\(^{20}\) Although sampling with the CMDPSU is permissible following the effective date of the proposed standard, the standard changes the requirements for a valid CMDPSU sample and these changes are immediately effective. Mine operators must submit a “control filter” when using a CMDPSU. There are strict requirements for ensuring that the “control filter” is exposed to the same environment as the submitted sample. See Proposed § 70.201(f), 75 Fed. Reg. 64486.

\(^{21}\) Proposed § 70.201, 75 Fed Reg. 64486.

\(^{22}\) Id. Under the proposed standard, designated areas associated with an MMU will become “other designated occupations” 18 months after the effective date of the standard.
The frequency of sampling will remain at the current five samples each bimonthly period so long as the CMDPSU is used to perform sampling.\textsuperscript{23} However, once a mine begins to utilize the continuous personal dust monitor for compliance purposes, mine operators must sample each designated occupation during “each production shift, seven days per week (Sunday through Saturday), 52 weeks per year.”\textsuperscript{24} “Other designated occupations” on each mechanized mining unit must be sampled during each production shift for 14 consecutive days during each quarterly period.\textsuperscript{25} “Designated areas” not associated with a mechanized mining unit must be sampled, using either a continuous personal dust monitor or a CMDPSU, for five consecutive production shifts each quarter.\textsuperscript{26}

Sampling devices will be required to be worn portal-to-portal and to remain with the designated occupation or at a designated area throughout the sampling process even if miners swap assignments and must remain operational for the entire shift even if the shift exceeds eight hours.\textsuperscript{27}

\textbf{[2] — Recordkeeping, Training and Transmission of Sample Data.}

The proposed standard contains numerous recordkeeping provisions which will be effective immediately. Mine operators must make a record showing the length of each production shift for each mechanized mining unit, must retain those records for at least six months, and make them available to MSHA.\textsuperscript{28} Similarly, the mine operator must record the amount of run-of-mine material produced by each mechanized mining unit during

\textsuperscript{23} Proposed § 70.207(a), 75 Fed. Reg. 64488. Note however that the new definition of “normal production shift” is effective immediately and will void many previously valid respirable dust samples.

\textsuperscript{24} Proposed § 70.208(a), 75 Fed. Reg. 64489.

\textsuperscript{25} Proposed §70.208(b), 75 Fed. Reg. 64489.

\textsuperscript{26} Proposed §70.209(a), 75 Fed. Reg. 64490.

\textsuperscript{27} Proposed § 70.201(e), 75 Fed. Reg. 64486.

\textsuperscript{28} Proposed § 70.201(g), 75 Fed. Reg. 64486.
each shift, maintain those records for at least six months, and make them available to MSHA.\textsuperscript{29}

Mine operators using continuous personal dust monitor samplers are required to provide training to all miners expected to wear a CPDM unit, keep a record of that training at the mine for a period of two years, and make it available to MSHA.\textsuperscript{30}

The requirements for the transmission of sample results to MSHA is found in Section 70.210 of the proposed standard. CMDPSU samples must be mailed within 24 hours of the end of the shift sampled.\textsuperscript{31} Continuous personal dust monitor samples and error data file information must be electronically submitted to MSHA within 12 hours after the end of the last sampling shift of the work week.\textsuperscript{32} The proposed regulation requires that CMDPSU and continuous personal dust monitor results be posted on the mine bulletin board. CMDPSU results from MSHA must be posted “upon receipt.”\textsuperscript{33} Continuous personal dust monitor results must be posted within one hour after the end of the sampling shift.\textsuperscript{34}

The preamble to the proposed respirable dust standard contains an estimate of benefits and costs of the proposed standard. MSHA estimates that the annualized cost to the coal industry ranges from $40 to $44 million. This analysis grossly understates the cost of the new standard.


The NMA submitted data to MSHA relating to the accuracy of the new continuous personal dust monitor compiled by Alliance Coal LLC (Alliance). Alliance took almost 1000 “side by side” single shift samples utilizing the

\textsuperscript{29} Proposed § 70.201(i), 75 Fed. Reg. 64486.
\textsuperscript{30} Proposed §§ 70.201(j) and (k), 75 Fed. Reg. 64486.
\textsuperscript{31} Proposed § 70.210(a), 75 Fed. Reg. 64491.
\textsuperscript{32} Proposed § 70.210(f), 75 Fed. Reg. 64491.
\textsuperscript{33} Proposed § 70.211(b), 75 Fed. Reg. 64491.
\textsuperscript{34} Proposed § 70.210(c)(1), 75 Fed. Reg. 64491.
continuous personal dust monitor and CMDPSU. The data demonstrated that 42 percent of the “side by side” samples had differences which exceeded 25 percent of the measured concentration. Obviously, this fails the NIOSH accuracy definition of accurate within 25 percent of actual concentration 95 percent of the time. The NMA noted that MSHA failed to compare the results of actual samples but instead compared averages of multiple samples which had the effect of “smoothing” the underlying data.

Comments submitted by the mining industry demonstrate that the cost to the public of the proposed rule will exceed MSHA’s estimated costs by several orders of magnitude. Black Panther Mining, Inc. (Black Panther) submitted a cost estimate to implement the proposed standard at its operations. Black Panther estimates that it will have to hire, train, and equip five new safety technicians to provide the sampling ability required by the proposed standards; purchase 48 continuous personal dust monitors, two mantrips, additional computers, and enlarge their building to accommodate the new people and equipment. First year expenses for this small operation are estimated to be $1,325,700 and annualized expenses to be in excess of $600,000.

The NMA also used the reported 2010 sampling data to estimate the number of samples required under the new standard. NMA determined that operators would have been required to take 526,150 designated occupation samples as compared to 27,865 valid samples taken in 2010 — a 1,939 percent increase. Similarly, application of the proposal to the “other designated occupations” would have required 215,432 samples to be taken as opposed to 11,038 valid samples taken in 2010. If the number of samples submitted grows exponentially under the new proposal, one can assume that the potential issuance of the number of violations issued will grow exponentially also.

Alliance evaluated the impact of the proposed standard on one mine and estimated that the mine would need 108 continuous personal dust monitors and 11 additional dust technicians to conduct the required sampling. Alliance estimated that its annual costs for conducting the sampling would be $1.2 million annually. Alliance also assumed that only four percent of the
estimated 14,688 samples per year would be non-compliant but estimated that the resulting 588 non-compliant samples would result in loss production valued at $30.2 million annually.

Clearly MSHA has seriously understated the cost to the public for the proposed standard.


The proposed standard provides for utilization of full-shift, single sample results to determine compliance and issue violations. Proposed Section 72.800 states:

The Secretary may use a single, full-shift measurement of respirable coal mine dust to determine average concentration on a shift if that measurement accurately represents atmospheric conditions to which a miner is exposed during such shift.\(^{35}\)

Compliance decisions can be made on samples taken by the mine operator or MSHA.\(^{36}\) The reliance on single shift samples constitutes a reversal of a long-standing policy decision regarding the appropriateness of basing compliance decisions on a single, full-shift sample.\(^{37}\)


The proposed standard includes a requirement that each mine operator develop a written plan for use of the required continuous personal dust monitor device at its mine. The proposed standard refers to these plans as CPDM Performance Plans and states that its purpose is “. . . to ensure that no miner working on an MMU shall be exposed to concentrations of respirable coal mine dust in excess of the applicable standard.”\(^{38}\) The standard

\(^{35}\) 75 Fed. Reg. 64498.
\(^{36}\) 75 Fed. Reg. 64447.
\(^{37}\) The history of that policy is discussed infra at pp. 13-15.
\(^{38}\) Proposed § 70.206(a), 75 Fed. Reg. 64487.
provides that the representative of the miners may review and provide written comments on the operator’s plan before the district manager reviews the plan. \(^{39}\) CPDM Performance Plans cannot be implemented until approved by the MSHA district manager.\(^ {40}\)

CPDM Performance Plans must include, among other things, pre-operational examinations and processes to verify operational readiness of the continuous personal dust monitors, procedures for downloading and transmitting the end-of-shift sampling information, the frequency with which responsible officials will review the reported dust concentrations, and actions permitted to be taken on the MMU to ensure that the occupation being sampled remains in compliance with the standard.\(^ {41}\)

\([3]\) — **Excessive Concentration Values and Their Consequences.**

The proposed standard contains tables of “Excessive Concentration Values” (ECV) to be used when sampling with either the CMDPSU or the continuous personal dust monitor. These tables are found in Parts 70, 71, and 90 of the proposed standard and apply to each individual sample taken by the mine operator. Excessive concentration values constitute action levels at which the mine operator must take certain action or risk enforcement action in the form of a citation or order.

If the excessive concentration value sample was taken using the CMDPSU, the mine operator must make approved respiratory equipment available to the exposed miners, take corrective action to lower the concentration of respirable dust, and record the corrective actions taken in the record books required by Section 75.363.\(^ {42}\)

Excessive concentration value samples taken using the continuous personal dust monitor require more significant action by the mine operator.

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\(^{40}\) Proposed § 70.206(a), 75 Fed. Reg. 64487.

\(^{41}\) Proposed § 70.206(b), 75 Fed. Reg. 64487, 64488.

\(^{42}\) Proposed § 70.207(i), 75 Fed. Reg. 64489.
Section 70.208(f) requires that approved respiratory equipment be made available to the exposed miners and that the mine operator implement corrective actions “to assure compliance with the applicable standard on the next and other subsequent production shifts.”\(^{43}\) The ECV sample must also be reported in the record book required by Section 75.363 and provide detailed information in that entry.\(^{44}\) In addition, an excessive concentration value sample mandates that the mine operator submit, within three days, the corrective actions taken as proposed changes in the approved ventilation plan; and submit, within seven days, any changes in the approved continuous personal dust monitor performance plan.\(^{45}\)

**[4] — Exceeding the New Exposure Limits.**

When sampling with the CMDPSU, mine operators can no longer expect to abate a violation for an over-exposure of the applicable standard for a designated occupation simply by submitting a valid compliant sample for that occupation. The proposed standard provides that a violation for an over-exposure will be abated when *each* of the five valid operator abatement samples is at or below the applicable standard and the operator has submitted revised dust control parameters as a part of the mine ventilation plan to the district manager and had such changes approved.\(^{46}\)

Abatement of a violation for an over-exposure of the applicable standard for a designated occupation when utilizing a continuous personal dust monitor to sample is not specifically discussed in the proposal. That is probably because the excessive concentration values table for the continuous personal dust monitor places the ECV level for a mine on the 1.0 mg/m\(^3\) standard at 1.13 mg/m\(^3\).\(^{47}\) Certainly, the majority of over-exposures of the 1.0 mg/m\(^3\)

\(^{43}\) Proposed §§ 70.208(f)(1) and (2), 75 Fed. Reg. 64489.
\(^{44}\) Proposed § 70.208(f)(5), 75 Fed. Reg. 64489.
\(^{45}\) Proposed §§ 70.208(f) (3) and (4), 75 Fed. Reg. 64449.
\(^{46}\) Proposed § 70.207(h), 75 Fed. Reg. 64489-64490.
\(^{47}\) Proposed § 70.207, Table 70-1, 75 Fed. Reg. 64489.
standard will exceed the ECV and thus mandate the corrective actions noted in Section 14.04[3] above. Among those specified actions is “[i]mplement corrective actions to assure compliance with the applicable standard on the next and other subsequent production shifts” (emphasis added).48 In short, violations of the applicable limit when sampling with the continuous personal dust monitor must be abated immediately or a second violation will be issued.

§ 15.05. The Hierarchy of Controls.

[1] — A Recognized and Accepted Approach to Industrial Hygiene.

The “hierarchy of controls” is an accepted industrial hygiene concept.49 It has been adopted by numerous governmental agencies in addressing issues involving public health and worker safety. The Occupational Safety and Health Administration, as well as MSHA, have incorporated this traditional tool into many regulations involving worker safety.

Simply stated the “hierarchy of controls” places primary emphasis on control of a hazard at the point of generation, the goal being to prevent atmospheric contamination. These controls are commonly referred to as engineering controls. In coal mining the engineering controls will usually be specified in the mine operator’s approved ventilation plan.50 Secondary emphasis is placed on administrative controls as a means of reducing the duration of exposure of the workers to the environmental hazard. In mining, this may mean rotating job assignments during a shift so that no one miner is downwind from the generation point of respirable dust for an entire shift. And the final level of protection under the traditional hierarchy of controls is personal protective equipment which, in this case, would be respirators or filtered air helmets. In a nutshell, the traditional protection strategy prefers engineering controls, if feasible, but accepts engineering controls,

49 See American National Standards Institute (ANSI) Z10-205.
50 See 30 C.F.R. § 75.371.
and allows the use of personal protective equipment where engineering and administrative controls are not feasible or are unable to provide the required level of protection. Most importantly, under the traditional hierarchy of controls, use of personal protective equipment such as respirators has been accepted as a method for achieving compliance with the applicable standard.

[2] — Hierarchy of Controls as Recognized by the Occupational Safety and Health Administration (OSHA).

The Occupational Safety and Health Administration (OSHA) has relied upon the traditional hierarchy of controls in implementing its air contaminants provisions of the standard limiting exposure to toxic substances.\(^{51}\) For example, with respect to airborne lead, OSHA requires that feasible engineering controls and administrative controls be used to reduce the exposure as low as possible but permits respiratory protection as a means of achieving compliance.\(^{52}\)

OSHA’s noise standard requires that employers use engineering and administrative controls and also allows hearing protection as a supplemental control. OSHA enforcement policy allows employers to rely on personal protective equipment and a hearing conservation program so long as the hearing protection effectively limits the employees’ exposure to the permitted limits.\(^{53}\)


In 2001, MSHA published a mandatory health standard for Diesel Particulate Matter (DPM) in metal and non-metal mines. The standard applied the traditional hierarchy of controls and therefore in metal and non-metal mines a mine operator may achieve compliance through using

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\(^{51}\) 29 C.F.R. § 1910.1000(e).

\(^{52}\) 29 C.F.R. § 1910.1025(e).

\(^{53}\) 29 C.F.R. § 1910.95.
respirators if engineering and administrative controls are inadequate to do so.\footnote{30 C.F.R. § 57.5060.} Surprisingly, MSHA’s standard for diesel particulate matter exposure in coal mines is silent as to the hierarchy of controls and the use of respirators in controlling exposure to diesel particulate matter.\footnote{See 30 C.F.R. § 75.325.}

\[4\] — MSHA’s Position Regarding Hierarchy of Controls for Respirable Dust.

MSHA’s proposed rule on respirable dust is silent about the hierarchy of controls. The new rule requires that operators use environmental control measures as their primary method of controlling respirable dust.\footnote{Proposed § 72.700(a), 75 Fed. Reg. at 64498 (October 19, 2010).} The new rule states:

(a) Respiratory equipment approved by the NIOSH under 42 C.F.R. part 84 shall be made available to all persons as required in parts 70, 71, and 90 of this chapter. Use of respirators shall not be substituted for environmental control measures in the active workings. Each operator shall maintain an adequate supply of respiratory equipment.\footnote{Id.}

MSHA stated in its explanation of proposed Section 72.700(a) that:

Proposed § 72.700(a) would retain the existing requirement under § 70.300 that requires operators to use environmental control measures as the primary means of regulating respirable dust in the active workings. Consistent with the Mine Act, the proposal would prohibit the substitution of respirators for environmental control measures. Under existing practice and policy, engineering controls are the primary method used to control exposure to respirable dust. Section 202(h) of the Mine Act expressly prohibits the use of respirators as a substitute for environmental control measures \ldots \footnote{75 Fed. Reg. at 64446.} \footnote{Proposed § 70208(h).}
However, Section 202(h) of the Mine Act is an interim health standard which could be changed if the Secretary of Labor found that a health standard incorporating the traditional hierarchy of controls provided better protection to miners.60 Further, it is not clear that the language of Section 202(h) of the Mine Act actually precludes the use of respirators as a method to achieve compliance. It merely states that engineering controls are to be the primary method of controlling exposure to respirable dust and that respirators may not be substituted for environmental control measures.


It is clear that MSHA does not intend to change its current enforcement strategy which requires that all outstanding violations for an overexposure of the respirable dust standard be abated by the operator implementing additional or different engineering control changes. Therefore, mine operators must be aware that the use of respirators or filtered air helmets, even within an effective safety management program, will not shield them from violations for an over-exposure and the consequential need to implement or modify existing environmental controls in their mines.

Nevertheless, mine operators should encourage or even require miners to wear such personal protective equipment whenever they believe they may be out of compliance with their respirable dust limit.61 There are two good reasons for implementing this course of action. As discussed in detail below, there is a substantial question as to whether there will be a rebuttable presumption that each over-exposure is significant and substantial.

MSHA’s Coal Mine Health Inspection procedures handbook reminds inspectors that violations of respirable dust standards should generally be designated as significant and substantial.62 However, it does require that inspectors evaluate the proper use of personal protective equipment (PPE)

61 Under the proposal, mine operators will eventually be required to sample on a daily basis on each production shift using the new CPDM and to transmit the data to MSHA.
in making that determination and it states that an inspector must also take into account, as well, any other evidence that miners were not exposed to the hazard posed by the excessive concentration of respirable dust.

Although the use of personal protective equipment will not constitute compliance with the dust standard, the proper use of personal protective equipment by the miners affected by the violation is relevant to determining whether the violation is significant and substantial. Therefore, mine operators should take care that the personal protective equipment has been properly selected, used, and maintained to ensure that an adequate degree of protection is afforded to the miner.

If the miners are being protected by their personal protective equipment, a continuous personal dust monitor reading in open air will not establish that they are actually exposed to the hazard of respirable dust. Such a finding could have a major impact on a mine’s status under MSHA’s pattern of violations program.\textsuperscript{63} In addition, the effective use of respirators and filtered air helmets constitutes a legitimate ground for giving a mine operator time to find a workable and cost effective method of abating the violation while mining progresses.

\textbf{§ 15.06. The Presumption of Significant and Substantial Under the Current Standard.}

\textbf{[1] — Will Over-exposure Violations Be Presumptively Significant and Substantial?}

Although over-exposure respirable dust violations in coal mines have been held to raise a rebuttable presumption that the violation is S&S, the basis for the courts’ decision in such cases is inextricably intertwined with the legislative history of the Mine Act and MSHA’s longstanding enforcement

\textsuperscript{63} On February 2, 2011, MSHA published a proposed regulation to amend its pattern of violations program which is found at 30 C.F.R. Part 104. See 76 Fed. Reg. 5719. The comment period is closed but MSHA has not published a final regulation as of this date. On April 6, 2011, MSHA announced the latest criteria for the initial review of mines under 30 C.F.R. Part 104. The criteria can be found at MSHA’s website at http://www.msha.gov/POV/POVScreeningCriteria2010.pdf.
policies. The sampling protocol found in the proposed respirable dust rule forsakes much of the rationale for holding such violations presumptively S&S. So an overview of the single-shift sample controversy will be helpful. We will start at the beginning.


The 1969 Coal Mine Safety and Health Act (“the Coal Act”) required that coal mine operators “continuously maintain the average concentration of respirable dust in the mine atmosphere during each shift . . . at or below 2.0 milligrams of respirable dust per cubic meter of air.”\textsuperscript{64} The Coal Act also defined the term “average concentration”:

\begin{quote}
a determination which accurately represents the atmospheric conditions with regard to respirable dust to which each miner in the active workings of a mine is exposed (1) as measured, during the 18 month period following the date of enactment of this Act, by the Secretary and the Secretary of Health, Education, and Welfare,\textsuperscript{65} and (2) as measured over a single shift only, unless the Secretary and the Secretary of Health, Education, and Welfare find, in accordance with the provisions of section 101 of this Act, that such single shift measurement will not, after applying valid statistical techniques to such measurement, accurately represent such atmospheric conditions during such shift.\textsuperscript{66}
\end{quote}

In July, 1971 the two Secretaries published a proposed finding that a single shift sample will not accurately represent the atmospheric conditions in

\textsuperscript{64} 30 U.S.C. § 842(b)(2).
\textsuperscript{65} The “Secretary” referred to here was the Secretary of the Interior. Those duties were transferred to the Secretary of Labor by § 301(a) of the Mine Act. The Secretary of Health, Education, and Welfare is now the Secretary of Health and Human Services and his Mine Act responsibilities are delegated to the National Institute of Occupational Safety and Health (NIOSH).
\textsuperscript{66} \textit{Id.} § 842(f) (emphasis added).
the active workings of a coal mine.\textsuperscript{67} On February 23, 1972, the Secretaries issued their “Notice of Finding That a Single Shift Measurement Will Not Accurately Represent Atmospheric Conditions During Such Shift.”\textsuperscript{68} As a result of this finding, compliance with the 2.0 milligrams of respirable dust per cubic meter of air was to be determined upon the \textit{average of five valid samples} taken on consecutive production shifts.

[3] — \textbf{Rulemaking Challenges.}

In 1980, MSHA revised the respirable dust rule and the mining industry challenged the rule, for among other reasons, MSHA’s failure to take into consideration the inherent variability in respirable dust sampling. However, that challenge was rejected in \textit{American Mining Congress v. Marshall}.\textsuperscript{69}

The Secretary had before him conflicting evidence on the amount of variability in the dust sampling process. The Secretary did take steps to reduce the potential for variability. The rule provides for multiple shift sampling, that is, using the average of a number of samples taken on consecutive shifts to determine compliance. All compliance determinations are based on the average dust concentration of five samples. \textit{This system minimizes the variability associated with the result of a single sample or several samples taken on a single shift.}\textsuperscript{70} \textsuperscript{71}

\textsuperscript{67} 36 Fed. Reg. 13286.
\textsuperscript{68} 37 Fed. Reg. 3833.
\textsuperscript{69} American Mining Congress v. Marshall, 671 F.2d 1251 (10th Cir. 1982).
\textsuperscript{70} MSHA acknowledges that a gravimetric sample will not necessarily be an accurate measurement of the actual dust at the sampling location. All that MSHA requires is that the sample give a measurement within 25 percent of the true dust concentration 95 percent of the time. This standard is based upon a document called the NIOSH Accuracy Criterion which was developed to serve as a benchmark for the approval of analytic methods and sampling equipment and not to define accuracy for purposes of enforcement. \textit{See} 75 Fed. Reg. 64447 (Oct. 19, 2010).
\textsuperscript{71} \textit{Id.} at 1259.
MSHA has sought to evade the import of the congressionally mandated 1972 finding that a single shift sample was not representative of atmospheric conditions through two initiatives during the 1990s. In 1991, MSHA instituted a new program wherein MSHA inspectors reviewed an operator’s submitted samples to determine whether any single full-shift sample exceeded the applicable standard by a pre-determined amount. If so, the mine operator was issued a violation for noncompliance.

Keystone Mining challenged violations issued as a result of samples taken by MSHA on a single shift and the decision by the Federal Mine Safety and Health Review Commission ("the Commission") rejected MSHA’s single shift enforcement efforts.\(^72\) Keystone argued that the 1971 finding had been made in accordance with the Section 101 standard making provisions of the Mine Act and could only be modified through notice-and-comment rulemaking. MSHA argued that the 1971 finding related to operator sampling only and not MSHA sampling. The Commission rejected MSHA’s arguments and held that "...the 1971 finding, issued for purposes of Title II, applies broadly to both MSHA and operator sampling of mine atmosphere."\(^73\) The Commission went on to hold that the 1971 finding could only be rescinded according to the notice-and-comment rulemaking requirements of the Mine Act.

MSHA’s subsequent efforts to use single shift sampling for compliance was futile. In 1994, MSHA and the Secretary of Health and Human Services (HHS) published a notice of their intent to rescind the 1971 finding.\(^74\) MSHA also published a notice announcing its intention to base compliance decisions on single shift samples.\(^75\) Comments were requested and public hearings were held. MSHA extended the date for comments multiple times. On February 3, 1998, MSHA and HHS jointly published their “final notice” and rescinded the 1971 finding.\(^76\)

\(^{72}\) Keystone Coal Mining Corp., 16 F.M.S.H.R.C. 6 (1994).
\(^{73}\) Fed. Reg. 6447 at 17.
\(^{74}\) 59 Fed. Reg. 8357 (Feb. 18, 1994).
\(^{75}\) 59 Fed. Reg. 8356 (Feb. 18, 1994).
Many of the commentators had raised concerns about the process that the two agencies utilized. Although the notice in 1994 had announced the agency’s intentions, it had not told the public just what specific provisions would be put in place of the 1971 finding. Therefore the 1998 “final notice” was challenged in federal court on the grounds that the agencies had failed to follow the Section 101 rulemaking process. In Nat’l Mining Ass’n v. Secretary of Labor,\textsuperscript{77} the court vacated the 1998 finding and held that the use of single-shift sample measurements by MSHA was an improved mandatory health standard that therefore must be promulgated in accordance with Section 101 of the Mine Act, 30 U.S.C. Section 811. Noting that MSHA had failed to make several specific findings required by Section 101, the court vacated the 1998 finding.\textsuperscript{78}

Subsequently, MSHA and HHS jointly instituted a rulemaking that again proposed rescinding the 1971 finding and proposed finding that the average concentration of respirable dust to which each miner in the active workings of a coal mine is exposed can be accurately measured over a single shift.\textsuperscript{79} A series of public meetings was held and the comment period was extended until September 8, 2000.\textsuperscript{80} The record has been reopened in 2003, and extended indefinitely since then, to allow persons to comment on personal dust monitors and other issues. MSHA has attempted to incorporate this earlier rulemaking into the proposed respirable dust rule.\textsuperscript{81} However, neither the Secretary of HHS nor his designee signed the proposed respirable dust rule.


On March 1, 1989, MSHA issued a citation to Excel Mining based upon an average respirable coal dust concentration which was calculated by

\textsuperscript{77} Nat’l Mining Ass’n v. Secretary of Labor, 153 F.3d 1264 (11th Cir. 1998).
\textsuperscript{78} Id. at 1269.
\textsuperscript{79} 65 Fed. Reg. 42068 (July 7, 2000).
\textsuperscript{80} 65 Fed. Reg. 49215 (August 11, 2000).
\textsuperscript{81} See 75 Fed. Reg. at 64447 (Oct. 19, 2010).
averaging dust samples taken on five different miners on the same shift. The administrative law judge concluded that the 1971 finding prohibited single shift sampling without regard to whether sampling takes the form of a single full-shift sample or an average of multiple samples taken on the same shift and vacated the citation. On appeal the Commission affirmed stating that the 1971 finding implementing Section 202(f) of the Mine Act “reaches all single shift sampling.”

On appeal, the court reversed after determining that both Section 202(f) of the Mine Act and the “finding” were ambiguous and the Secretary was entitled to the deference described in *Chevron U.S.A. Inc. v. Natural Resources Defense Council.* The Secretary contended that Section 202(f) of the Mine Act permitted the Secretary to use either multiple-shift samples or multiple single shift samples to calculate average dust concentration for enforcement purposes and the court agreed. Finding the Secretary’s interpretation to be a “reasonable choice,” the court reversed.


An S&S violation is described in Section 104(d)(1) of the Mine Act as a violation “of such nature as could significantly and substantially contribute to the cause and effect of a . . . mine safety or health hazard.” A violation is properly designated as S&S “if based upon the particular facts surrounding that violation, there exists a reasonable likelihood that the hazard contributed to will result in an injury or illness of a reasonably serious nature.” In *Mathies Coal Co.*,88 the Commission set out a four-part

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82 Excel Mining LLC, 23 F.M.S.H.R.C. 600, 606 (June 2009)(emphasis in original).
84 Secretary of Labor v. Excel Mining LLC., 334 F.3d 1 (D.C. Cir. 2003).
85 The Secretary’s view was that § 202(f) only barred use of a single full-shift sample which measures a single miner’s exposure over a single shift. *Id.* at 11. This is the sampling protocol that the proposed respirable dust rule adopts as its enforcement mechanism.
86 *Id.* at 17.
88 *Mathies Coal Co.*, 6 F.M.S.H.R.C. 1, 3-4 (January 1984).
test for analyzing significant and substantial issues. Evaluation of the criteria is made assuming “continued normal mining operations.”\(^{89}\) The question of whether a particular violation is S&S must be based upon the particular facts surrounding the violation.\(^{90}\)

Under the Mathies test, the Secretary must establish: (1) the underlying violation of the health or safety standard; (2) a discrete health or safety hazard, a measure of danger to safety or health contributed to by the violation; (3) a reasonable likelihood that the hazard contributed to will result in an illness or an injury; and, (4) a reasonable likelihood that the illness or injury in question would be of a reasonably serious nature. The Secretary is not required to show that it is more probable than not that an illness or injury will result from the violation.\(^{91}\)

The Commission addressed the issue of whether an over-exposure violation of the respirable dust rule was S&S in Consolidation Coal Co.\(^{92}\) Consolidation Coal did not contest the fact of violation but did dispute the S&S designation which had been added to the violation as a matter of MSHA enforcement policy. The Commission felt that a departure from the National Gypsum standard was justified because of the fundamental differences between the typical safety hazard and the respirable dust exposure-related hazard at issue in the case. The Commission found in legislative history and statutory text of the Mine Act a clear Congressional understanding of the nature of the exposure related health hazards of respirable coal dust. The Commission noted that:

[W]e find in the Mine Act an unambiguous legislative declaration in favor of preventing any disability from pneumoconiosis or any other occupational-related disease. We also find repeated

\(^{89}\) U.S. Steel Mining Co., 6 F.M.S.H.R.C. 1573, 1574 (July 1984).
\(^{91}\) U.S. Steel Mining Co., 18 F.M.S.H.R.C. 862, 865 (June 1996).
\(^{92}\) Consolidation Coal Co., 8 F.M.S.H.R.C. 890 (June, 1986), aff’d 824 F.2d 1071 (D.C. Cir. 1987).
observations in the legislative history that a respirable dust standard at or below 2.2 mg/m$^3$ would produce no dangers of miners developing disabling disease.\footnote{Id. at 897.}

The Commission then stated the elements necessary to support an S&S finding for a violation of a mandatory health standard such as the respirable coal mine dust standard:

1) the underlying violation of a mandatory health standard;

2) a discrete health hazard — a measure of danger to health — contributed to by the violation;

3) a reasonable likelihood that the health hazard contributed to will result in an illness; and,

4) a reasonable likelihood that the illness in question will be of a reasonably serious nature.\footnote{Id.}

The Commission found, as a matter of law, that any exposure above the 2.0 mg/m$^3$ level satisfies the second element of the test. As for the third element of the S&S test, the Commission held that if the Secretary proves an overexposure a presumption arises that the third element of the test — a reasonable likelihood that the hazard will result in an illness — has been established. Finally, the Commission held that the legislative findings by Congress and the specific findings by the administrative law judge with regard to the effects of pneumoconiosis “... support a conclusion that there is a reasonable likelihood that illness resulting from overexposure to respirable dust will be of a reasonably serious nature.”

The Commission went on to offer a small, but potentially meaningful, concession:

... the presumption that the violation is significant and substantial may be rebutted by the operator by establishing that miners in the designated occupation in fact were not exposed to the hazard posed.

\footnote{Id. at 897.} \footnote{Id.}
by the excessive concentration of respirable dust, \textit{e.g.}, through the use of personal protective equipment.\footnote{Id. at 899.}

\textit{Consolidation Coal} is undoubtedly applicable to any exposure above the 2.0 mg/m$^3$ standard but its application to overexposures between the proposed 1.0 mg/m$^3$ and the 2.0 mg/m$^3$ is problematic as the rational is not applicable to concentrations at those levels.

\section*{§ 15.07. Conclusion.}

The Secretary extended the original comment period repeatedly and closed the comment period on June 20, 2011. MSHA held a total of seven public hearings in Utah, Kentucky, Indiana, Pennsylvania, West Virginia, Alabama, and Virginia to allow for comments from mine operators, miners, and the public. Although a number of the comments received by MSHA were clearly form letters drafted by public interest groups, many thoughtful and detailed comments were received from the coal industry, safety and health professionals, and miners. The NMA, in particular, submitted a thorough analysis of MSHA’s Qualitative Risk Analysis and the need for the utilization of the traditional hierarchy of controls.

As proposed, the new rule would have a momentous effect on the nation’s underground coal mines. The economic impact on our underground mines will be significant and the rule, as proposed, is simply unworkable. We can only hope that MSHA will seriously consider the comments submitted by the industry and that the final rule differs significantly from the proposed rule discussed herein.