September 11, 2023

Christopher J. Williamson
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Re: MSHA Silica PEL (RIN 1219–AB36)

Mr. Williamson:

On behalf of the undersigned medical and public health organizations, we appreciate the opportunity to comment on the Mine Safety and Health Administration's (MSHA's) proposed rule: Lowering Miners' Exposure: Respirable Crystalline Silica and Improving Respiratory Protection (RIN 1219-AB36).

The American Thoracic Society (ATS) is a medical professional organization of over 15,000 physicians, researchers, nurses, respiratory therapists, and allied health professionals dedicated to the prevention, detection, treatment and cure of respiratory disease, critical care illness and sleep disordered breathing. In short, we are lung experts. As lung experts, ATS plays a lead role in the prevention, detection, research, and treatment of patients with occupational lung disease caused by exposure to silica dust. Our annual conference and journal feature case reports of occupational silicosis disease and current research on the prevention and treatment of patients with silicosis and silica-associated diseases.

The American Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease through education, advocacy and research. As a key part of our mission and an integral part of preventing lung disease, the American Lung Association champions clean air for all, including in the workplace. The Lung Association is also focused on improving the quality of life for those with lung disease, including silicosis.

The American College of Chest Physicians (CHEST) is a leading professional association in innovative and life-saving chest medicine. We support the advancement of improved health outcomes for patients with lung disease through education, advocacy, research, and philanthropy. CHEST is the professional home for more than 21,000 pulmonary, critical care, and sleep medicine professionals dedicated to the delivery of quality, evidence-based care for

patients. Our mission is to champion the prevention, diagnosis, and treatment of chest diseases with a focus on ensuring and improving access for all patients, particularly underserved patients of highest need.

**Silica Exposure Continues to Be a Significant Occupational Hazard for Metal and Non-Metal (MNM) Miners**

As well documented in the MSHA proposed rule background, silica exposure can result in silica-associated lung disease in MNM mining operations and continues to be a significant hazard for US miners. Silica-related lung diseases, which include silicosis/pneumoconiosis, chronic airway obstruction/chronic pulmonary disease, lung cancer and other diseases, are incurable progressive lung diseases that result in significant disability and premature death. While cases of pneumoconiosis in miners had been on the decline, we have seen an upswing in cases since the 1990s, including the most severe forms of disease and in miners at a younger age. The increase in this devastating disease is in large part due to increasing silica exposures in mining processes.[1, 2] Despite knowledge of the risk of disease caused by exposure to silica dust and availability of engineering interventions to control exposures to silica dust in mining operations, US miners continue to develop silica-related lung diseases from occupational exposures. The approach to reduce this risk as noted by MSHA is to reduce exposures in the workplace and monitor for exposure-related health effects.

**Support the Proposed More Protective Permissible Exposure Limit of 50 ug/m3**

The undersigned organizations support the more protective permissible exposure limit (PEL) of 50 ug/m3 and encourage MSHA to move forward swiftly to finalize this standard. We note, the proposed PEL of 50 ug/m3 brings the MSHA standard in line with the protection offered to nearly all industries covered by OSHA. The proposed PEL of 50 ug/m3 is supported by available science and can be readily achieved with currently available engineering interventions to ensure occupational mining exposures do not exceed the proposed MSHA PEL.

**Support the Proposed More Protective Action Level of 25 ug/m3**

The undersigned organizations also support the proposed more protective action level of 25 ug/m3. Setting a more protective action level of 25 ug/m3 will ensure heightened monitoring and interventions when silica dust exposure levels exceed the action level threshold.

**Extend Silica PEL Implementation to All Phases of MNM Mining, Including Slope Mining and Exploratory Mining**

In review of the proposed rule text and in conversations with concerned parties, it remains unclear if the implementation scope of the proposed rule covers slope mining or exploratory mining. While we appreciate the verbal clarification of the scope of the rule by MSHA staff, we strongly urge the final rule to clearly and explicitly state that the silica rule covers all aspects of

mine operations (typical and non-typical mining operations). A clear statement will provide assurances to miners and occupational health advocates who are closely following this important policy.

**Vulnerabilities of the Dust Sampling and Reporting System**

Dr. Drew Harris – medical director of the black lung program at the Stone Mountain Clinic in Jonesville VA – recently wrote an opinion piece about the MSHA proposed silica rule in the NY Times. The Stone Mountain Clinic serves miners with black lung and other occupational respiratory issues in Virginia, Tennessee and West Virginia. In that opinion piece, Dr. Harris noted that his patients have, quote "shared stories with me of supervisors who directed workers to place dust monitors in closed lunch pails or to wrap them in coffee filters that allow air to enter the dust samplers but keep dust out."[3]

Our collective members who treat miners with occupational lung disease have shared similar stories of their patients describing how mine operators intentionally take and report dust collection samples in a way to explicitly mask actual exposure levels, including, placing monitors directly in front of air vents, collecting dust samples on non-typical days – like when dust producing machinery is not in operation - and conducting dust monitoring sample for outdoor mine operations on days with heavy rain. Each of these actions is intended to evade accurate reporting of silica dust exposure experienced by miners.

While we cannot independently verify these claims of dust sampling manipulation nor do we know how widespread these practices are, they do demonstrate how vulnerable the system of dust sampling and reporting is to manipulation by mine operators motivated or incentivized to provide accurate detail of conditions.

As the agency finalizes the rule, we urge MSHA to consider regulations to prevent such dust monitoring manipulation, including providing explicit guidelines on acceptable dust collection sampling techniques, requiring dust sampling being conducted by an independent entity, and the utilization of randomized and unannounced dust sampling collection visits.

**Dust Collection Sample Reporting**

As we understand the proposed rule, MSHA is requiring mine operators to take dust collection samples, retain record of the dust collection sample results for a certain period of time, and make the results of dust collection samples available during periodic MSHA mine inspections. We believe such a reporting system is too passive and fails to take advantage of aggregating sampling data for research and analysis. We urge MSHA in the final rule to require timely reporting of dust sample results to a central source – presumably MSHA or possibly the National Institute for Occupational Safety & Health (NIOSH).

We anticipate several benefits from central reporting. Public health and occupational health experts can use the centrally reported data to better understand exposure patterns, correlate exposure patterns with disease and better understand how exposures might alter the disease process for occupational disease.

There is engineering control value to central reporting. Central reporting of silica dust exposure will also allow miner operators, unions, and makers of dust engineering controls to evaluate dust emissions at various mine operations. It could help determine the most effective engineering control systems for dust suppression, discover variations in dust exposure at different sites using the same dust suppression systems (and perhaps identify reasons for variation), detect outliers that warrant further investigation, and discourage fraudulent reporting of dust sample results.

**Exposure Measurement**

As pointed out in the proposed rule, miners often work shifts longer than 8-hours. The longer shift work means miners have longer exposure periods for silica dust and other exposures – increasing the cumulative burden of exposure and reducing the rest time the miners' lungs have to recuperate and "clear" the lungs of daily exposures. We support MSHA's proposal to require full shift monitoring to accurately capture the total cumulative miner exposure to silica dust.

**Medical Monitoring**

We support MSHA's proposal to require medical monitoring for MNM miners; however, population-level health surveillance with oversight by a centralized agency is lacking from the current proposed rule.

We believe that MNM miners are entitled to the same degree of NIOSH oversight for medical screening, examination and program oversight as coal miners.

We strongly recommend that MSHA create a parallel system to the Coal Worker's Health Surveillance Program (CWHSP) for MNM miners' health surveillance. We believe that NIOSH, which has effectively implemented the CWHSP for over 5 decades, should be the organization that oversees a similar program for metal and non-metal miners. The CWHSP provides respiratory health surveillance through NIOSH-approved facilities and NIOSH-operated mobile units. The program offers health screenings for coal miners and allows researchers to identify trends in disease across the nation. Without this program, we would not be aware of the epidemic of progressive massive fibrosis in Appalachian coal miners.[4] A parallel system for metal and non-metal miners, run by NIOSH is imperative.

The current proposed rule does not specify any certification for the screening/examining physicians for MNM miners other than being a specialist in pulmonary or occupational medicine. We believe a parallel verification / certification by NIOSH (similar to that which exists for coal workers) will help ensure the *impartiality* of examining physicians (similar to the certification by the NIOSH CWHSP). If NIOSH oversight of examining physicians in MNM workers is not possible, then the MNM workers should be allowed to select the specialist of their choosing for health surveillance exams. This is critical given recent publications highlighting the existing of bias in physicians examining miners.[5]

As part of the medical monitoring for MNM workers, we urge MSHA consider central reporting of abnormal chest imaging results and impaired pulmonary function test results. Central reporting of abnormal findings will support population-based oversight and analysis of miner health and may earlier detect important health signals in miners at an earlier date. We note that mine operators are already required to report mine workers accidents and injuries to MSHA. Expanding the current reporting system to include abnormal medical findings in chest x-rays, pulmonary function tests, and other diagnostic tests related to occupational lung disease would be a natural extension of the current injury reporting system.

We propose that medical monitoring / surveillance of both MNM and coal workers should be a mandatory component of disease detection and prevention. Without mandatory participation, it is likely that MNM participation will be similar to The Coal Worker Health Surveillance Program in which 65% of workers do not participate.[6] By making participation in surveillance programs mandatory, MSHA can strengthen protections and prevention efforts for all miners. MSHA could allow miners to "opt out" of these exams if they so choose (rather than having miners "opt in, as is currently the case within the Coal Worker Health Surveillance Program).

We further propose that medical monitoring should occur at an every 3-year interval. The current epidemic of progressive massive fibrosis (PMF) in Appalachian coal has informed our recommendation – coal miners are now developing PMF in as little as 7 or 8 years of mining.[7] Waiting every 5 years to survey the health of current miners is not sufficient to prevent morbidity and mortality.

We propose that medical monitoring of MNM workers include conventional chest radiographs with interpreting physicians utilizing the International Labor Organization (ILO) classification system. This will facilitate a standardized approach needed for diagnosis and population health surveillance. However, recent publications have highlighted that low-dose chest CT scans are more sensitive than conventional chest radiographs for detection of pneumoconiosis.[8] Because of this improved sensitivity of CT scans, we recommend that MSHA require coal operators to provide low-dose chest CT scans to miners if CT scan is recommended by the provider evaluating the miner during their health surveillance exam. Although utilization of CT scans may improve individual disease detection, it may also limit population level disease surveillance.

This is because in the US, there is a lack of standardization for how to interpret CT scans for the diagnosis of pneumoconiosis. (The International Classification of High-resolution Computed Tomography (HRCT) for Occupational and Environmental Respiratory Diseases [ICOERD] system is not widely utilized in the US and there are few B-readers trained in this system).

**Medical Monitoring Capacity**

It has been suggested that there is currently insufficient capacity of B-readers and other health care providers need to comply with medical monitoring requirements in the proposed rule. We note that with the continued expansion of telemedicine and digital formats of medical images, there is an expanding capacity of medical experts who could play a role in meeting the medical monitoring requirements of the proposed rule.

**Use of Personal Protective Equipment (PPE) as Temporary Measure to Reduce Silica Dust Exposure**

We strongly support MSHA's finding that engineering controls are the best and preferred method of controlling miner exposure to silica dusts. The recent NIOSH publication "Best Practices for Dust Control in Coal Mining"[9] clearly depicts how PPE (including respirators) are the least effective means of protection from respirable dust for coal workers, and we agree that this hierarchy of controls illustrated in the following figure should apply to all miners including MNM miners:

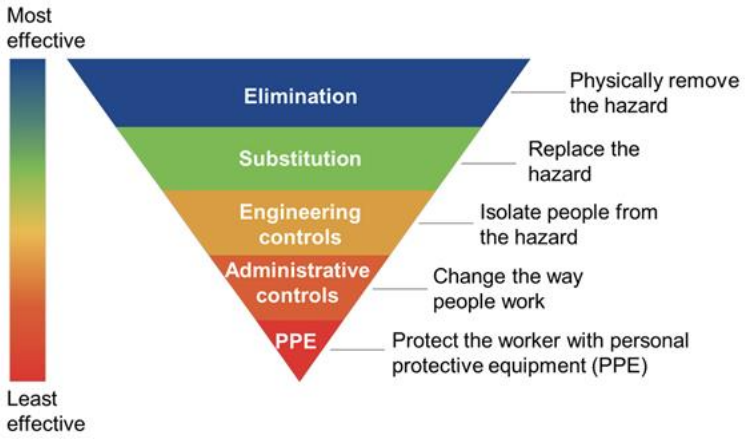


**Figure I.1. Hierarchy of controls approach for reducing workplace hazards [NIOSH 2015].**

However, we have serious concerns with the current MSHA rule's reliance on "temporary and non-routine" use of PPE (masks and respirators).

First, we recognize that when used correctly, personal protective equipment can be highly effective in reducing exposures. Correct use requires proper selection of the device, proper

mask fit, frequent maintenance, and individual training as well as workers' ability to use it correctly in all settings.

Despite the potential effectiveness of respirators for reducing silica dust exposure, we are concerned that many mine operators and miners may lack the resources needed to ensure proper use of PPE and may therefore use the equipment inappropriately – thus creating a false sense of exposure protection from silica dust.

The NIOSH publication on "Best Practices for Dust Control in Coal Mines" states that effective PPE requires miners to:

> #1 "Diligently wear a respirator", and
> #2 Limit time in an occupation to avoid reducing the afforded protection.

We have serious concerns that the current proposal does not take into consideration either of these two NIOSH recommendations.

> #1 Diligent use of respirators is impractical for miners who often work in extreme conditions, including hot temperatures in confined spaces. Certain tasks (e.g. roof bolting) or mine locations (e.g. underground mines that are thousands of feet below the surface) expose miners to temperature extremes that make continuous use of respirators for multiple hours impractical. Miners commonly acknowledge to their healthcare teams that they are unable to wear respirators for long periods of time due to difficulty breathing while wearing them (due to increased respiratory load) and conducting manual labor (e.g. hauling 50 pound bags of rock dust, or hanging 100+ pounds of miner-cable). Given the increased respiratory load that respirators confer, miners frequently report having to remove respirators frequently while at work to reduce their respiratory load. Furthermore, wearing respirators makes verbal communication very challenging, which has the unintended consequence of increased safety risks due to reduced ability to communicate between miners.
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> #2 The current rule does not specify time limitations for potential reliance on respirators during unsafe dust exposures, and instead states that reliance on respirators is "temporary." This leaves open the possibility that miners could be recommended to rely on respirators for weeks or months while awaiting effective long-term solutions (e.g. engineering and administrative controls). We strongly recommend that NIOSH specifies what the definition of "temporary" is with regard to a time limitation.

Furthermore, we think it is important for MSHA to recognize that at the time a coal operator is notified that a silica dust sample exceeds the PEL, it is highly likely that coal miners have already

been exposed to unsafe silica levels (exceeding the PEL) during their current shift and likely for numerous preceding shifts (given the time delay it takes from the dust sampling to the lab reporting). Given this delay, it is critical that at the time a PEL is exceeded, efforts are made to immediately avoid future exposures.

We propose that reliance on respirators be limited to miners who are working in mines on the same day/shift that a silica dust level has been identified as exceeding the PEL. We further propose that miners should be immediately required to wear a respirator to safely shut down operations for their current shift. We propose that no miner be allowed to return to work in unsafe dust conditions until corrective actions have been put in place and silica levels are confirmed to be less than the silica PEL.

In other words, we propose that "temporary" reliance of a respirator be limited to miners actively working at the time it is noted that silica exceeds a PEL – and only for the duration of time it takes to safely shut down operations.

**Medical Relocation**

We support the proposal to use medical relocation of miners who show signs of lung disease. As described in the proposed rule, miners should not be punished for requesting medical relocation and should retain current pay and prospects for future pay increases. We note chest x-rays are available to miners, at no cost, under the black lung program – but that many miners do not take advantage of the black lung screening benefit. According to physician members who treat miners with lung disease, many miners do not seek chest x-rays for fear it will show an abnormal finding and subject the miner to either dismal or diminished job prospects with the mine operator.

As MSHA moves forward with the final rule, it needs to carefully consider how to ensure miners have safeguards in place to exercise part 90 status throughout the medical relocation process. Furthermore, we recommend that part 90 status be expanded to MNM and not only coal miners.

**Funding for monitoring and enforcement**

We recognize this is not within the scope of the proposed rule,however, it is clear that effective implementation, monitoring, and enforcement of the proposed silica dust rule will require additional resources at MSHA. We urge MSHA, the Administration and appropriators in Congress to provide the agency the resources needed to provide effective workplace protection from silica-related disease to all miners.

On behalf of the undersigned organizations, we appreciate the opportunity to submit comments. Our organizations strongly support MSHA's proposed rule to reduce miner exposure to silica dust – a known cause of serious respiratory disease and other conditions.

Sincerely,

American Thoracic Society
American Lung Association
American College of Chest Physicians

References


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