From: Watzman,Bruce [mailto:BWatzman@nma.org]
Sent: Monday, December 14, 2009 8:43 AM
To: zzMSHA-Standards - Comments to Fed Reg Group
Subject: RIN 1219-AB48

Attached are the comments of the National Mining Association in response to the request for information regarding the continuous personal dust monitor.

Attachment 1

December 14, 2009

Ms. Patricia W. Silvey
Director
Office of Standards, Variance and Regulations
Mine Safety and Health Administration
1100 Wilson Boulevard, Room 2350
Arlington, Va. 22209-3939

Re: Respirable Coal Mine Dust; Continuous Personal Dust Monitor – Request for Information (74 Fed. Reg. 52,708)

Dear Ms. Silvey:

These comments are submitted on behalf of the members of the National Mining Association (NMA) in response to the Request for Information (RFI) published by the Mine Safety and Health Administration on Oct. 14, 2009. (74 Fed. Reg. 52,708)

Before turning to the specific questions posed in the RFI we want to reiterate NMA's support for continued development and deployment of the continuous personal dust monitor (CPDM). NMA and several of its members have been directly involved in development of the CPDM since its inception. Moreover, NMA member companies have made their mines available to serve as test beds during development and testing of the CPDM. Today many mines are using the CPDM as an engineering and educational tool to provide real-time information for miners and management to achieve further reductions in respirable coal dust exposures, however general industry experience with the CPDM is limited.

We continue to believe that the CPDM has the potential to bring about a paradigm shift in how miners are protected from disabling occupational lung disease. It must however be done via a systematic approach to ensure that we are not replacing one system with recognized technologic shortcoming for another with similar problems. In this regard we must call to the agency's attention information regarding problems with units delivered since the beginning of the year that has necessitated their return to the CPDM manufacturer. While these instances have been limited we implore the agency to examine the significance of these as it continues it's deliberations on the CPDM deployment strategy.

It is important to recognize that the CPDM is but one piece of a complex puzzle that must be constructed and maintained to ensure that miner's exposure to coal dust and silica are reduced. As discussed in our response to the specific questions posed in the RFI, we believe significant reductions in miner's exposures to coal and silica

dust will only be achieved when MSHA recognizes and provides operator's authority to use non-traditional dust exposure reductions tools, as an adjunct to the suite of traditional controls in use today.

We appreciate having the opportunity to comment on this most important initiative. We look forward to working with the agency as we design a comprehensive sampling system that protects miners from contracting lung disease during their career.

Sincerely,

Bruce Watzman
Senior Vice President,
Regulatory Affairs

Attachment 2

Responses to Questions

A. *CPDM Application Strategies*

1. Please address conditions and circumstances under which CPDMs should be proposed for use in underground coal mines. Please address whether the CPDM could be integrated into the existing compliance strategy, and if so, how.

We believe the CPDM should, except for the collection of quartz samples, replace the current sampling system. The CPDM provides the opportunity to design a compliance sampling system predicated upon the collection of real-time personal samples, an attribute missing from the current system, upon which intervention actions can be designed and implemented.

This however should occur only after long-term, in-mine durability testing of the unit is conducted. As the agency is aware, mine operators throughout the industry have purchased and are using the CPDM as an engineering tool to guide their dust control strategies. As the industry and the agency continues to gain knowledge from these experiences and gains confidence in durability of the device the opportunity exists to design a compliance sampling system predicated upon the CPDM's collection of real-time personal samples..

2. Please address the advantages and disadvantages of the existing compliance strategy, which relies on a combination of occupational and area sampling, versus a personal exposure monitoring strategy only.

The current sampling strategy was designed recognizing the technologic limitations of the sampling technology. The CPDM provides for the design of a sampling system that recognizes the power that the CPDM brings to sampling. No longer will miners and operators have to await the analysis of samples at an off-site laboratory before implementing intervention actions. The CPDM is premised upon the collection of personal samples to protect miners on a real-time basis. The collection of occupational and area samples is no longer necessary as the CPDM permits protective measure decisions based upon the collection of real-time samples to calculate end-of-shift exposures. Similarly, the CPDM eliminates the long-standing controversy surrounding the use of a single-shift sample to make compliance determinations. Combined with the industry/labor supported dose concept, miners will be afforded greater protections from over-exposures than exists today with the result being a reduction in miner's overall dust exposures during their working career.

3. If CPDMs were to be required, how should a compliance strategy based on CPDMs be structured?

Compliance should be predicated upon the collection of samples taken on all scheduled production shifts each calendar week (i.e. Sunday through Saturday). This is predicated on the understanding that the exposure limit for a week will not

exceed the dose equivalent of that received as if exposed to 2.0 mg/m^3 for forty hours per week. Further, this is dependent upon MSHA assuming responsibility for compliance sampling.

4. How would the use of CPDMs impact the frequency of sampling?

The real-time sampling aspects of the CPDM technology provide the opportunity for more frequent sampling than is achieved under the current system. Depending upon the deployment strategy that is finally arrived at the CPDM provides the potential to sample those miners working in what have been traditionally considered, as designated by MSHA, to be the "high risk" occupations during each of their work shifts.

5. What examinations should be performed to assure the validity of exposure measurements and how frequently should these be made?

The examinations **do need** to be changed to be compatible with the PDM. Pre-op checks do not necessarily need to be done within 3 hours prior to sampling since the CPDM can be programmed a week ahead of time. The flow rate checks during the second and last hour are not necessary because the flow rate is not displayed on the CPDM, and the flow rate is recorded each minute along with the other data. Also the CPDM is equipped with sensor fault technology, i.e. tilt and movement sensors which record and log failures in the CPDM data files. Everything needed can be found in the CPDM data downloaded for the sample. The only checks needed might be to ensure the miner to be sampled is wearing the proper CPDM and the data card is properly filled out.

6. Since the current exposure limits were developed from 8-hour shift exposure measurements, how should the miner's end of shift be reported when the work shift is longer than 8 hours?

The CPDM is capable of monitoring a miner's exposure for up to 12 hours. This will provide for portal-to-portal sampling for all production shifts, based on known work scheduled.

7. Since the CPDM cannot be used to monitor for quartz how should the applicable coal dust standard, including reduced standards established when the quartz content of the respirable dust standard exceeds 5 percent, be addressed when using a CPDM?

The inability of the CPDM, at present, to sample for quartz will necessitate that the current gravimetric sampler be maintained for quartz sampling. We understand that the National Institute for Occupational Safety and Health (NIOSH) and the CPDM manufacturer are conducting research to develop a filter that will accommodate the collection of silica samples but until such time that a sampling media is developed that insures the integrity of the sample it will be necessary to conduct quartz sampling as is currently the case.

8. Please address the use of CPDMs for sampling in outby areas, including specific areas, occupations and frequency of sampling.

Historic sampling results indicate that exposures in outby areas are far lower than those in areas where coal is being extracted. As such, sampling frequency in outby areas need not be as robust as the frequency employed at the face. Just as the CPDM will provide face workers with real-time sampling results so that intervention measures can be taken to avoid over-exposure, so too does it provide this same capability for workers in outby areas. Importantly however, sampling deployment and frequency schedules must be guided by the wealth of historic sampling results that the agency maintains.

9. Please address the use of engineering and administrative controls including how such controls should be applied to the CPDMs real-time exposure readings.

Just as with the current sampling system, engineering and administrative controls are important elements of a multi-dimensional system to minimize miner's exposures to coal dust and silica. The premise upon which the CPDM was designed is to provide miners and management a tool upon which they can take real-time intervention measures, during a miner's work shift, to prevent end-of-shift over-exposures. Providing operators the ability to utilize administrative controls (worker rotation) and the use of personal protective devices is central to developing a comprehensive protection strategy. Without recognizing these elements the power and utility of the CPDM will be significantly dimished.

10. What actions should be taken by the mine operator when a miner's exposure during a working shift reaches the dust standard limit?

The underlying principle of the CPDM is to prevent the situation upon which this question is premised. By using the CPDM's real-time exposure capabilities and its predictive capabilities, operators will be able to employ engineering and administrative tools to prevent miner's exposures from reaching the dust standard limit.

11. Please address the use of CPDMs at surface mines, including sampling of areas, occupations and miners.

As designed the sampling technology is a component of the miner's cap lamp system. Given that few, if any, surface mines utilize cap lamps the CPDM, as currently configured, would not be an appropriate sampling tool for use at surface mines.

B. Dust Control Plan Requirements

1. Please address the advantages and disadvantages of using engineering controls to maintain the mine atmosphere in the area where miners work or travel.

Engineering controls have, and will remain, the primary means to reduce miner's exposure to dust. However, it must be recognized that these alone are not always sufficient to ensure that exposures are below the allowable level. The primacy of engineering controls can and must be validated but where they are not sufficient, operators must be afforded the flexibility to employ other means to keep exposures below the allowable level. Recognition of this will become increasingly important as the agency considers, via a separate regulatory initiative, reducing the current exposure limit for quartz.

2. If CPDMs are used, please address the information that would need to be included in the dust control portion of the mine ventilation plan, including information related to addressing silica.

Currently the dust control portion of mine ventilation plans is designed to be a surrogate means to prevent over-exposure during non-sampling times. As such, they are designed to ensure that conditions remain largely unchanged between sampling periods. Unfortunately, this has not always occurred. Additionally, the time required to obtain sampling results has put further importance on dust controls to limit miner's exposures.

The real-time analytic capabilities of the CPDM change the role of the dust control plan. Real-time sampling eliminates the need for compliance/non-compliance determinations to be made based upon conformity with dust control plan parameters. Use of the CPDM will enable the agency to make these determinations based upon miner's actual exposures, rather than on conformity with the surrogate requirements of the methane and dust control plan.

C. Recordkeeping

1. Who should be responsible for maintaining the CPDM data files and why? How long should exposure records be maintained? How should information be used?

The CPDM is designed to enable operators to download sampling data to a laptop for analysis. Read-only protective measures have become commonplace in the information technology field and such protections must be integrated in the CPDM software to guarantee the integrity of the sampling system. Data files should be transmitted to the Mine Safety and Health Administration (MSHA) at intervals not to exceed 30-days. Consistent with other MSHA requirements, the files should be maintained by the operator for a period of one year.

2. How should data from operator monitoring using the CPDM be transmitted to MSHA? What data should be transmitted? How often should the data be transmitted?

See response to preceding question.

3. Under current regulations mine operators, with few exceptions, post the monitoring results on the mine bulletin board for a period of 31 days. How

practicable would it be for operators to continue this practice if monitoring is conducted with the CPDM, which results in the collection of significantly more data than with the current MRE instrument?

Data file sorting and the reports generated are a function of software capability and programming. Just as operators post sampling results today so too should they post, for a period of one-month, sampling results obtained using the CPDM.

D. Education and Training

1. What training should miners receive if required to wear the CPDM. What type of training would be necessary to assure that the miners understand how the device works, what information it provides, and how the information should be used?

All miners should be trained in use and care of the CPDM before first usage and this should be included as a part of the annual refresher training required under 30 C.F.R. Part 48.

2. What qualifications should be required before an individual is permitted to operate and maintain a CPDM?

Current 30 C.F.R. Parts 70.202 and 203 specify the requirements for sampling and maintenance and calibration by certified persons. These requirements, modified to recognize the differences between the CPDM and the current sampling technology, are an appropriate model to address operation and maintenance issues arising from use of the CPDM.

3. Which mine personnel should oversee CPDM usage, download exposure information and interpret data?

As noted earlier, CPDM software permits the generation of read-only files. As such, access to the data should be available to all management personnel and, where appropriate, the representatives of the miners. Irrespective of whom the individuals are they should be MSHA certified.

E. Benefits and Costs

1. What would be the benefits of using CPDMs in a comprehensive and effective compliance strategy?

First and foremost the CPDM provides miners and operators with a powerful tool to make intervention decisions on the basis of real-time data. The net result will be a long-term reduction in exposures and a commensurate elimination in the potential for lung disease resulting from overexposures.

2. What costs would be associated with using CPDMs?

Recent CPDM purchases have averaged approximately $13,000 per unit – up from the initial price of slightly more than $11,000 per unit. Additionally, filters have increased from $5.00 to $8.00 per filter. Finally, operators will incur increased cost for training and maintenance, costs that cannot be quantified until such time as the industry gains more experience in CPDM usage.

3. What would be the advantages, disadvantages and relative costs of different methods of using CPDMs?

Cost is a factor of the deployment strategy that is advanced by the agency. The number of units required to comply with the sampling strategy will determine the capital and annual costs that will be incurred. Logic says that a strategy requiring sampling of every miner on every shift will be significantly more costly than one that identifies high risk occupations for more frequent sampling and, outby sampling on a limited basis.

4. Would the use of CPDMs affect small miners differently than large mines, and if so, how?

The use of the CPDM should not, per se, impact small mines differently than large mines once the units are in place. However, small mines may have more difficulty committing the capital required for the initial purchase but this will be overcome if, as we suggest in response to the next question, the government purchase CPDM's and deploy them across the industry.

5. What incentives, if any, should MSHA consider to promote effective use of CPDMs in coal mines?

MSHA should purchase CPDMs for deployment across the industry.

6. What actions, if any, should MSHA take to encourage coal mining industry acceptance of the CPDM technology, stimulate market forces for more competitive pricing of CPDM devices and promote innovation in respirable dust monitoring technology?

While we do not have any specifics recommendations regarding actions MSHA should take to stimulate industry acceptance of the CPDM we must draw the agency's attention to industry-wide concerns regarding the unit's price, and the financial requirements for operation and maintenance. It is our hope that new technology providers will enter the marketplace and we encourage MSHA to utilize whatever means at its disposal to encourage such actions.