



November 21, 2005

Mine Safety & Health Administration
Office of Standards, Regulations and Variances
1100 Wilson Boulevard
Room 2350
Arlington, VA 22209-3939

RE: RIN 1219-AB24

Dear Director:

These comments are submitted on behalf of the National Mining Association (NMA) in response to the Proposed Rule that was published on July 29, 2005, 70 Fed. Reg. 43950, proposing to revise the existing health standards for asbestos exposure at metal and nonmetal mines, surface coal mines and surface areas of underground coal mines. We appreciate having the opportunity to comment on this most important regulatory initiative.

Permissible Exposure Limit

At the outset let us note our support for the agency's decisions to revise the 8-hour time weighted average permissible exposure limit (PEL) from the current 2 fibers per cubic centimeter of air (f/cc) to the proposed .1 fibers per cubic centimeter of air (f/cc) and the revised short-term excursion limit of 1.0 fiber per cubic centimeter of air as averaged over a 30-minute sampling period. These limits, which are consistent with those of MSHA's sister agency the Occupational Safety and Health Administration (OSHA), reflect the levels derived from a OSHA conducted risk assessment as protective and achievable to reduce an individuals risk of developing adverse health effects from exposure to asbestos or asbestos containing materials.

Identification and Measurement of Airborne Fiber Concentrations

It is important to note that the exposures encountered in the mining environment, albeit limited, are for the most part distinguishable from those encountered in the OSHA regulated environment. As such, it is extremely important that MSHA employ identification, sampling and analytic techniques that are appropriate for the mine-setting presented. This concern was recognized, as early as 1985, by Wylie and colleagues who concluded that the phase-contrast light microscopy method

AB24-COMM-106

(PCM) may not be appropriate in the mining environment where many non-fibrous particles may be present.¹

OSHA's regulation of asbestos [29 CFR 1910.1001] is aimed at protecting employees from adverse health consequences where products are known to contain asbestos materials. In such instances, air sampling is appropriate to ensure that exposures do not exceed proscribed levels. While similar conditions may present themselves in the mining environment, the possibility of encountering asbestos veins adjoining or nearby the mined ore is rare. As such, MSHA's standard requires a different, more exacting level of detection and analysis than that contained in the proposed rule – a process that involves an early identification mechanism to ascertain if air sampling is warranted.

The proposal as written does not describe how to determine if asbestos is present in the mining environment. Rather, it adopts OSHA's PCM sampling approach which is directed toward known asbestos containing environments. Unfortunately, one cannot simply conduct air sampling in mining environments and assume the PCM "fibers" collected (which are greater than or equal to 5 microns with a minimum length to width ratio of 3 to 1) are asbestos fibers.

The fiber counting criteria employed in PCM can be used to count asbestos fibers in a known asbestos containing environment, but they are not intended to "define" asbestos. If improperly used to do so, there is a very real possibility that in some mining environments elongated amphibole cleavage fragments will be identified improperly as asbestos fibers. In some cases this could result in improper MSHA non-compliance citations and (perhaps worse) improperly expose an operator to asbestos litigation. NMA is concerned that the proposed rule, as currently written, does not make this fiber distinction problem clear, nor does it provide adequate guidance as to how it might be avoided. MSHA does, however, expressly state: "cleavage fragments are not asbestiform and do not fall within our definition of asbestos" (pg. 43953). NMA therefore assumes MSHA does recognize that there is no asbestos-related occupational disease associated with exposure to amphibole cleavage fragments (see OSHA 57 FR 24310-24311).

Throughout this proceeding alternative analytic methodologies have been suggested to prevent the above situation from occurring and to provide a higher level of certainty that non-compliance determinations are factually correct and scientifically sound. The conceptual approach presented by the National Stone, Sand and Gravel Association at the agency's June 2002 public hearing is but one that the agency should seriously consider. Similarly, the comments submitted by Cleveland-Cliffs Inc. recommends an analytic approach that better ensures an additional level of scrutiny and certainty where an initial determination based upon PCM reveals fiber counts in excess of the PEL. Under this approach PCM would be supplemented by transmission electron microscopy (TEM) analysis for those samples exhibiting fiber counts exceeding the PEL which may not be asbestos. The

¹ Wylie, A.G., Virta, R.L., Russel, E. 1985. Characterizing and discriminating airborne amphibole cleavage fragments and amosite fibers: Implications for NIOSH method. *Am. Ind. Hyg. Assoc. J.* 46(4); 197-201.

value of this approach has been recognized by Verma and colleagues who analyzed the different fiber counts obtained using the PCM and TEM methods.² This approach will permit the agency to utilize, on an as-needed basis, a diagnostic tool that MSHA itself admits, “allows us to better identify asbestos minerals in air samples collected in a mine” (pg. 43975). We recognize, and urge MSHA to be cognizant of the fact that PCM and TEM are both analytic tools to be used by component analysts who are properly trained to distinguish asbestos from non-asbestos as per sound, scientifically mineralogical nomenclature.

We believe the agency should employ PCM to determine if fiber counts exceed the PEL and TEM to determine if the identified fibers are indeed, those contained within the federal definition of asbestos. At a minimum the agency should, just as it has correctly incorporated by reference Appendix A of OSHA’s asbestos standard (29 CFR 1910.1001), also incorporate Appendix B&C of the same standard. These appendices are equally applicable to ensure that compliance determinations are based upon a thorough examination of the samples obtained utilizing the most precise and accepted analytic methods available. To do otherwise would unnecessarily cause alarm where no cause exists and subject employers to adverse compliance decisions based upon imprecise analytic tools.

To address the identification and measurement concerns discussed above, we recommend that the Proposed Rule be amended to read as follows:

56.5001 (amended) – 57.5001 (amended) and 71.702

(b) *Asbestos standard.*

(1) *Definitions.* Asbestos is a generic term for a number of hydrated silicates that, when crushed or processed, separate into flexible fibers made up of fibrils. As used in this part –

Asbestos means chrysotile, amosite (cummingtonite-grunerite asbestos) crocidolite, anthophyllite asbestos, tremolite asbestos and actinolite asbestos and does not include non-fibrous or nonasbestiform minerals.

Asbestiform means a mineral that crystallized with the habit (morphology) of asbestos. The asbestiform crystal growth habit is generally recognized by the following characteristics which are best observed on a population basis and therefore best observed in bulk samples:

Mean fiber aspect (length to width) ratios ranging from 20:1 to 100:1 or higher for fibers longer than 5 micrometers. Very thin fibrils,

² Verma D. and Clark, N., 1995. Relationship between phase contrast microscopy and transmission electron microscopy results of samples from occupational exposure to airborne chrysotile asbestos. *Am. Ind. Hyg. Assoc. J.* 56:866-873.

usually less than 0.5 micrometers in width, and two or more of the following:

- Parallel fibers occurring in bundles
- Fiber bundles displaying splayed ends
- Matted masses of individual fibers and/or
- Fibers showing curvature

Fiber Counting Criteria are 5 micrometers (μm) or longer with a length-to-diameter ratio of at least 3:1.

(2) Permissible Exposure Limits (PELs). – (i), (ii) - (no change recommended)

(3) Measurement of Asbestos. Airborne asbestos fiber concentration shall be determined by phase contrast microscopy using a method statistically equivalent to the OSHA Reference Method in OSHA's asbestos standard found in 29 CFR 1910.1001, appendix A when the exposure is known 'a priori' to be only commercial asbestos (not mixed dust).

When a fiber exposure is not known to be asbestos (or is otherwise equivocal) or is a mixed dust exposure, additional investigation is necessary because no currently available analytical method is specific to airborne asbestos. This additional investigation shall include the following:

- Review of available geological information for the identification of regulated asbestiform mineral occurrences in the mining deposit.
- The analysis of bulk samples (ore, insulation, settled dust, etc.) that is representative of the miner's work area exposure. OSHA appendix C 29 CFR 1910.1001 (Polarized Light Microscopy Method) or an equivalent method shall be used for bulk analysis. The absence of asbestos in bulk samples shall eliminate the need for air sampling and/or analysis of particulate on air filters. The presence of asbestos in the bulk sample at any level will require personal air sampling or analysis of collected air samples.
- On air samples analyzed by PCM or TEM, the characteristics of asbestos fibers defined in section (b) 1 above, described in OSHA appendix C and supported in OSHA appendix B, shall be observed.
- Bulk and air samples that have been analyzed with results indicating the presence of asbestos at any level shall be retained for a period of no less than one year for possible reanalysis. This sample retention requirement will be applied to mine operator and MSHA collected samples.

It is imperative that the agency recognize, just as we have, that there is no full-proof method for identifying asbestos in a mining environment. As such it is critically important that the agency develop a system to retain, for further analysis, any samples where asbestos is conclusively identified by the agency. The current practice of discarding samples after 30-days must be revised to protect the rights and interests of all parties. Moreover, we encourage the agency to ensure that mine operators are provided, upon request, a punch of any sample filter where the agency and/or its outside laboratory have made a positive finding for asbestos.

Supplemental Issues

Two other issues warrant comment. First, we support the agency's determination that "non-regulatory measures could adequately address" the potential hazards associated with take-home contamination in those few and limited circumstances where it might exist.

The agency has correctly concluded that there are no operating asbestos mines in the U.S. and that existing standards are sufficient to ensure that adequate protective steps are implemented in those limited instances where asbestos fibers are detected and confirmed. Given the wide variation among mining operations and practices it is imperative that the agency afford operators maximum flexibility to design and implement measures that best prevent the potential for take-home contamination. To do otherwise would unnecessarily increase the costs of such programs with no demonstrated benefit. Miners, mine operators and government regulators alike must all participate in the development and implementation of such programs and we believe these are most effective when structured to eliminate site-specific exposures.

Finally, in both written and oral testimony representatives of organized labor have urged the agency to extend the scope of the proposal to include underground coal mines. This position is based upon two unsupported premises: First, that underground coal miners can encounter asbestos containing products in their work environment and second, that there remains the possibility that an asbestos containing rock vein might be encountered during normal mining operations.

We are not aware of any underground coal operations that have encountered asbestos containing rock nor are we aware of any underground coal miners that have been diagnosed as suffering from asbestos related health disorders due to an exposure arising in the underground environment. Asbestos containing products have been removed from the underground environment thus eliminating this possible source of exposure.

Section 101(a) (6) (A) of the Mine Act requires the Secretary to promulgate standards that assure that no miner will suffer material impairment of health or functional capacity due to an exposure arising in their occupational setting. In

making this determination the Act requires that such standards be based upon “research, demonstrations, experiments and such other information as may be appropriate.” The rulemaking record contains no such documentation and there is no justification for broadening the application of this proposed rule to include underground coal mines.

Again, thank you for this opportunity to provide comments on this most important regulatory initiative.

Sincerely,

Bruce Watzman
Vice President
Safety, Health & Human Resources