

# COUNCIL ON PRACTICES AND STANDARDS

Serving the Specialist of the  
Safety, Health and Environmental  
(SH&E) Profession

---

---

ASSE's Council on Practices and Standards provides you with the following article.

If you would like to reprint this article in your Chapter Newsletter, please notify Rennie Heath at [rheath@asse.org](mailto:rheath@asse.org) and credit the Council on Practices and Standards. In addition, please refer readers to the <http://www.asse.org/practicespecialties> website.

## **New Asbestos Initiatives May Impact the Safety Profession**

By Jeffery C. Camplin, CSP, CPEA

Issues related to asbestos are back on the front burner again. Several activities on the federal level may impact how the SH&E profession addresses asbestos risks, worker protection, asbestos management and regulatory compliance. Recent initiatives include:

1. Proposed new asbestos-related legislation and regulations.
2. New and proposed funding on developing a revised asbestos risk assessment protocol.
3. Expanded health risk research.
4. New analytical protocols.
5. Addressing naturally occurring asbestos.

These new initiatives combined with efforts to address the billions of dollars in outstanding liability in the face of increasing asbestos-related deaths should raise awareness in the SH&E profession. This article provides an overview of how the SH&E profession can prepare for the effects of the evolving concerns on both financial and health-based asbestos risks.

## **A Decade of Controversy Spurs Asbestos Updates**

Knowledge of health risks associated with asbestos has taken a strange twist over the last decade. Asbestos, the name given to a group of six different fibrous minerals, was found to cause health-related problems with work related to airborne exposures during their mining, manufacturing and construction. EPA banned the manufacture and use of several asbestos-containing materials (ACMs) in the mid-1970s. OSHA regulated worker exposure to asbestos in the early 1980s with substantial revisions to their regulations in 1994 and 1995. Both EPA and OSHA regulations did not differentiate between the various types of asbestos minerals (chrysotile, amosite, crocidolite, tremolite, actinolite and anthophyllite). In addition, the measurements of asbestos concentrations in building materials and air were established based on the limitations of analytical protocols available at the time and not on health-based standards (>1% in materials and 0.1 fibers per cubic centimeter in air).

During the 1970s and 1980s, litigation and new regulations by EPA, OSHA and state and local agencies created a multibillion dollar profession and multibillion dollar lawsuits. Some 30 years later, how asbestos risk is measured, analyzed and regulated must be changed. Some see the change as good, while others are satisfied with the status quo.

The most significant impact on the new asbestos initiatives occurred around the turn of the 21<sup>st</sup> century. First, evolving health-based research on worker and public exposure to naturally occurring asbestos in Libby, MT revealed flaws in the 1% threshold for regulating asbestos. It also unveiled the need to expand the number of minerals regulated under the term “asbestos.” Secondly, the release of over 400 tons of asbestos during the collapse of the World Trade Center challenged established worker exposure standards and cleanup standards. Traditional air monitoring was ineffective when extreme concentrations of various dusts and fibers were present during emergency response and cleanup. These events have impacted new research and initiatives, which will forever change how asbestos risks are addressed in the U.S. and internationally. These events have demonstrated that the arbitrary standards by which we regulate asbestos in the U.S. are no longer valid for protecting workers and the public from exposure to asbestos.

### **Proposed Asbestos Legislation**

A bill is pending in the U.S. House of Representatives (already approved by the Senate in 2007) titled the “Ban Asbestos in America Act of 2007.” When I first entered the asbestos profession in the early 1980s, I was mistakenly under the impression that asbestos was no longer used in buildings. What I subsequently learned is only the most dangerous forms of asbestos materials were banned. Friable asbestos was banned because it could easily crumble by mere hand pressure, spewing dangerous asbestos fibers into the air. Asbestos is an airborne hazard so “friable” that asbestos was banned in products. Most friable asbestos is not found in buildings built after 1980. However, nonfriable forms of asbestos such as flooring, roofing, and asbestos cement products are still legal to install in building in the U.S. How can we be in 2008 and just get to the point where all forms of asbestos-containing materials are now being banned for good? Also, if all forms of asbestos in products have not been banned, then where have we been using them and potentially exposing workers and the general public?

The proposed 2008 asbestos ban seeks to eliminate a large category of remaining asbestos-containing materials that are still legal to use in the U.S.: non-friable asbestos product. The vast majority of these products includes asbestos flooring, roofing and cement products. The proposed legislation also seeks to redefine ACM from containing greater than 1% asbestos to containing 0.25% or greater concentrations of asbestos. Additionally, the legislation seeks to include materials contaminated with asbestos, including sand, gravel and mining operations. This change is meeting with strong opposition in the House version of the bill. The Senate removed the discussion of the 0.25% threshold and asbestos-contaminated materials in their controversial version of the bill, which they passed last year. More information on the “Ban Asbestos in America Act of 2007” can be obtained at <http://www.govtrack.us/congress/bill.xpd?bill=h110-3285>.

### **Update on OSHA’s Asbestos Regulations**

OSHA significantly revised their asbestos regulations in general industry and construction in 1994. In general, OSHA requires employers and building owners to:

1. Identify known or presumed locations of asbestos, communicate its presence to employees, tenants and outside contractors.
2. Provide training and work practices for those who come into contact and/or disturb these materials.

3. Implement regulated areas where asbestos is disturbed to protect those employees working near asbestos disturbance work areas.

In 2006, OSHA revised its respiratory protection standard and increased the protection factor of powered air-purifying respirators (PAPR) from 100 to 1,000 for asbestos exposures. Now OSHA has additional respiratory protection changes pending that would allow for compliance officers to cite employers individually for each employee not wearing respiratory protection in asbestos-regulated areas. Currently, only one citation can be made for a worksite. OSHA has also developed an "Asbestos Advisor" interactive computer program to assist employers with asbestos regulatory compliance in industry and construction at <http://www.osha.gov/dts/osta/oshasoft/asbestos/index.html>.

### **NIOSH Proposes Cutting-Edge Asbestos Research**

In 2007, NIOSH unveiled its asbestos roadmap, which identified gaps in knowledge on asbestos health risks and proposed new research designed to fill those gaps. This research was proposed in part because of the complexity in the mineralogy, the inconsistencies in various scientific literature and inconclusive evidence, which have led to uncertainties in identifying and applying the term "asbestos" for health and regulatory purposes. This has prompted NIOSH to convene a workgroup to investigate these issues. In 2008, NIOSH revised its research roadmap based on public comments received. NIOSH is currently considering the scientific research needs to reduce the uncertainties in the science used to develop worker protection policies for asbestos fibers and other elongated mineral particles (EMPs). Subsequently, it is expected that the products of this research will influence how NIOSH views occupational exposure to various minerals when there is a potential for inhalational exposure to EMPs. This document is intended as one step in the process. NIOSH intends to pursue partnerships with other federal agencies and other stakeholders to help focus the scope of the research that can contribute to the scientific understanding of asbestos fibers and other EMPs, to fund and conduct the research activities and to develop and disseminate educational materials describing results from EMP research and their implications for occupational and public health policies and practices.

ASSE's Environmental Practice Specialty helped formulate comments to NIOSH on its original research agenda in 2007 and its recent revised research agenda in 2008. ASSE strongly supported the initial asbestos roadmap but was slightly critical of the 2008 roadmap, which curtailed the emphasis of the initial research agenda. To view copies of the 2007 comments provided to NIOSH, visit <http://www.asse.org/professionalaffairs/docs/053007NIOSHAsbestos.doc>. Note that ASSE has not officially submitted the 2008 comments to NIOSH as of this *EnviroMentor* issue's printing.

The revised NIOSH asbestos roadmap provides one of the best summaries of the current knowledge (and associated gaps) on analytical methods and asbestos health risks. Any SH&E professional who works in construction or in facilities known to contain asbestos would benefit from a review of these data. The asbestos roadmap can be reviewed at <http://www.cdc.gov/niosh/docket/nioshdocket0099.html>.

### **EPA's Flip-Flop on Asbestos Risk**

EPA testified at a congressional hearing earlier this year that the 1% threshold used to regulate asbestos in building materials and products is not protective of health. They also stated that the rarer forms of asbestos minerals, called amphiboles, are much more toxic than

previously thought. In fact, EPA's current risk assessment models are now so outdated, they do not accurately measure human health risks from asbestos. Specifically, EPA is concerned that the outdated risk models severely underestimate low-level asbestos exposures and exposures to amphibole forms of the asbestos minerals. Congress finally approved funding of new studies to better estimate risk from asbestos. Unfortunately, this new research and the subsequent revisions to their risk model will not be completed until 2011 or 2012.

EPA also formed an expert panel to review several theories associated with asbestos and risk. This expert panel was charged with evaluating whether amphibole forms of asbestos minerals should be regulated differently than the more common chrysotile asbestos (found in 95% of ACMs). In a surprise finding, the expert panel ruled that although sufficient evidence suggests that differences exist in the potency of different types and sizes of asbestos fibers, there is insufficient data for EPA to create the different categories of asbestos to address the increased toxicity of amphiboles. This is considered a victory for trial lawyers representing asbestos plaintiffs and a huge defeat for those being sued for workers who were predominately exposed to chrysotile asbestos. It should be noted that EPA need not follow the expert panel's guidance and recommendations.

### **Keeping Asbestos in Buildings During Demolition**

Another pending EPA ruling addresses an alternate asbestos control method during demolition of buildings. Currently, EPA regulates asbestos during demolition under the Clean Air Act's "National Emission Standard for Hazardous Air Pollutants." This regulation, last updated in 1990, requires building owners to remove all friable (and some forms of nonfriable) asbestos-containing building materials prior to demolition. However, an alternative procedure has been proposed and tested to demonstrate that many ACMs can remain in buildings during demolition. The "Alternate Asbestos Control Method" (AACM) is currently under review by another EPA expert review panel. If approved, only highly friable ACMs would need to be removed prior to demolition. All remaining asbestos materials would remain in the building. AACM requires that the building and remaining asbestos materials undergo a treatment with a wetting foam with continual wetting during demolition. All debris and some soil must also be removed and disposed of as regulated asbestos waste. According to EPA, "the alternative method, if successful, would likely accelerate the demolition of many abandoned buildings around the nation that remain standing, currently presenting a variety of serious risks to nearby residents. Using AACM, these former blighted areas would then be available for redevelopment, potentially creating jobs and tax revenue for communities." AACM could significantly impact the asbestos and demolition industries. Visit EPA's Region 6 website at [http://www.epa.gov/region06/6xa/asbestos\\_p2-jump.htm](http://www.epa.gov/region06/6xa/asbestos_p2-jump.htm) for more information.

### **New Asbestos Analytical Protocols Address Risk**

New theories on asbestos health risks have general consensus on a few evolving issues that are now the focus of new EPA and NIOSH research. First, it appears that amphibole asbestos minerals are more toxic than the more common chrysotile asbestos mineral. Also, it appears that thinner and longer fibers, which remain in the lungs for long periods of time, are more toxic than those that are thicker and shorter. If true, these new theories will spawn a revolution in how asbestos is sampled and analyzed in soils, building materials and products, air and water. Currently the International Organization for Standardization (ISO) has air sampling protocols now used in asbestos risk assessments, which address many of these issues. ASTM International is also considering significant revisions to analytical methods for soils, building materials and air sampling. New analytical protocols might result in better data, but also negate

previous testing data compiled by many building owners and employers over the last three decades. Most of the new analytical methods will not be fully developed until EPA and NIOSH research is completed in the next five to ten years.

### **Naturally Occurring Asbestos in Soils**

Asbestos minerals are naturally occurring. Unfortunately many of the asbestos minerals “occur” in areas where large populations of people live. Until recently, no one could contemplate regulating naturally occurring asbestos. However, recent developments in Libby, MT have set precedence on how naturally occurring asbestos might be regulated in the future. In the town of Libby near the Canadian border, ore from a vermiculite mine was contaminated with an asbestos fiber that has been linked to illness and possibly death of miners and their family. EPA has found that most vermiculite is likely to contain small traces of asbestos contamination. The Libby mine was responsible for producing over 70% of the world’s vermiculite before the mine was closed in 1990. This mine has been found to be contaminated with tremolite asbestos and other fibrous amphibole minerals. EPA has established the Libby mine as the largest Superfund cleanup project in history. Earlier this year, the mine’s owners, WR Grace, settled a cleanup bill with EPA for an estimated \$250 million dollars for work performed throughout the mine and the neighboring town of Libby. However, it is estimated that over 35 million homes might be insulated with this same material, sold as Zonolite attic insulation. EPA has yet to formally address the health risks associated with the vast use of this product. Safety professionals can obtain additional information on asbestos-contaminated vermiculite at <http://www.epa.gov/asbestos/pubs/verm.html>.

### **Conclusion**

The science that supports current asbestos regulations and lawsuits is currently under revision. This new research will impact regulations, work practices, sampling and analytical methods, risk assessment models and liabilities. The SH&E profession should be aware of these issues to ensure that workers are properly protected from asbestos health risks and that their employers are protected from potential future liabilities from manufactured and naturally occurring asbestos. The *EnviroMentor* will continue to keep members updated on these issues.

Jeffery C. Camplin, CSP, CPEA is president of Camplin Environmental Services, Inc. in Rosemont, IL. He is a past Environmental Practice Specialty administrator and co-chair of the Body of Knowledge Committee of the Council on Practices and Standards.