Libby Trial Ends but Asbestos Hazards Remain in Buildings

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The largest criminal trial ever involving environmental hazards came to a close in early May 2009, but the dangers from the asbestos-containing materials mined in Libby, Montana that were the subject of the case continue to go unregulated. The jury's decision finding all defendants not guilty does not diminish the need to protect workers and the public from this hazard. Instead, the trial highlighted the US government's continuing failure to regulate such materials. The deadly conditions in Libby have drawn the attention of federal and state agencies, researchers, the media, and most recently, the criminal justice system. Studies completed on residents of the town demonstrate that exposure to vermiculite material has resulted in hundreds of deaths and many more cases of asbestos-related disease; yet barriers remain to adequately addressing the presence of construction materials from Libby found in thousands of homes and commercial buildings.[1] Because US Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) regulations rely on crude analytical methods and definitions that exclude some asbestos materials based on morphology and chemical composition, such regulations are insufficient to protect public health. In fact, some researchers have suggested that the regulatory definition of asbestos must be expanded to include more than the six asbestos minerals they currently cover.[2]

For decades prior to 1990, W.R. Grace operated a vermiculite mine that was the source for millions of tons of construction material that was marketed as an asbestos substitute. Unfortunately, the vermiculite ore from Libby was mixed with other materials to make fireproofing, and was used as attic insulation and even as soil conditioner. Although the company shut the Libby mine in 1990, it was not until ten years later that Grace publicly confirmed that Monokote 4 and Monokote 5 fireproofing products sold in the U.S. from 1970 to 1989 were asbestos-containing products from this mine.[4,5] This intentional deception was permitted to happen because of the vague and conflicting regulations that address asbestos hazards. Remarkably, it is still legal to sell this material, as was pointed out by the defense in their closing arguments.[3]

Monokote fireproofing material constituted the largest portion of the substantial amount of asbestos released in the World Trade Center disaster. The New York Times reported in 2001 that the majority of the 150,000 steel-framed buildings built during the 1970s and 1980s in the US are coated in similar fireproofing.[6] As these buildings age, they undergo more frequent renovations and demolition during which the asbestos is released in the air, placing maintenance and construction workers at significant risk of contracting asbestos-related disease.

Sparked by a series of media reports in 1999, the EPA embarked on a major investigation and subsequently a massive cleanup effort in Libby in response to the overwhelming evidence that hundreds of residents had been diagnosed with or died from asbestos-related disease.[7] Despite earlier warnings, the agency did not respond until it was too late for most people in the town.[8]

A report issued by the EPA's Office of Inspector General in 2001 outlined the reasons the government failed to act sooner and noted that barriers continue to impact the agency's ability to respond to this public health hazard.[9] The fragmented authority within EPA, and between it and other agencies, that was cited in the Inspector General's report as a reason that this tragedy was able to continue for so long has not been addressed.

The polarized light microscope (PLM) method mandated by EPA is inadequate to detect asbestos fibers in vermiculite samples and is one of the reasons that W.R. Grace was able to deceive the public and stall government regulators.[10,11] EPA regulations apply to asbestos-containing materials that exceed a 1% (by weight) threshold.[12] However, the PLM method, on which regulators depend, is based on a volumetric estimate and is not sensitive enough to identify asbestos fibers that cling to the vermiculite or to identify thin fibers. The limit of quantification for identifying tremolite in vermiculite mixtures with this method may well be above the EPA's mandated cutoff of 1%.

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The EPA has conducted research to simulate airborne asbestos levels that can be generated from these materials in buildings and determined that the removal of vermiculite attic insulation resulted in exposures that are 25 times higher than the "safe" level allowed in schools.[13] In a letter addressed to me in 2007, the EPA acknowledged that if spray-applied construction materials from Libby are disturbed in the course of maintenance or construction, "It should be performed by an asbestos professional" (personal correspondence, January 3, 2007).

The agency has also given similar advice to homeowners that find vermiculite insulation in their homes and even goes so far as to say that the standard laboratory method required by the agency to identify asbestos in building materials should not be used for these materials.[14] However, the EPA has failed to incorporate this advice into regulations and has not notified building owners and contractors about this well-documented hazard. Research efforts to refine alternative identification protocols with transmission electron microscopy (TEM) have not resulted in any changes to antiquated regulatory requirements.

Much of the material mined in Libby was processed with heat to release trapped air in the ore, causing the material to exfoliate. It was then sold under the trade name Zonolite. In addition to being an additive in spray-applied insulation and ceiling materials, it was also used as form of loose insulation in millions of homes in the US and Canada. But the damage is not limited to North America, as W.R. Grace had exported tons of this material and even set up processing plants in Cuba, Puerto Rico, India, Australia, Pakistan, Venezuela, Chile, Brazil, and Italy.[15]

What we have learned in Libby demands that antiquated asbestos regulations be updated to protect public health. With the end of the criminal trial, which highlighted the decades of missed opportunities on the part of the government to act, federal regulators must now work to close the regulatory loophole for vermiculite and mandate more accurate testing methods. The EPA must also get the word out to building owners and contractors to protect maintenance and construction workers before they too end up in court fighting for compensation. Finally, efforts should be made to formally notify countries that imported these products and provide assistance to help identify the fate of these materials.

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