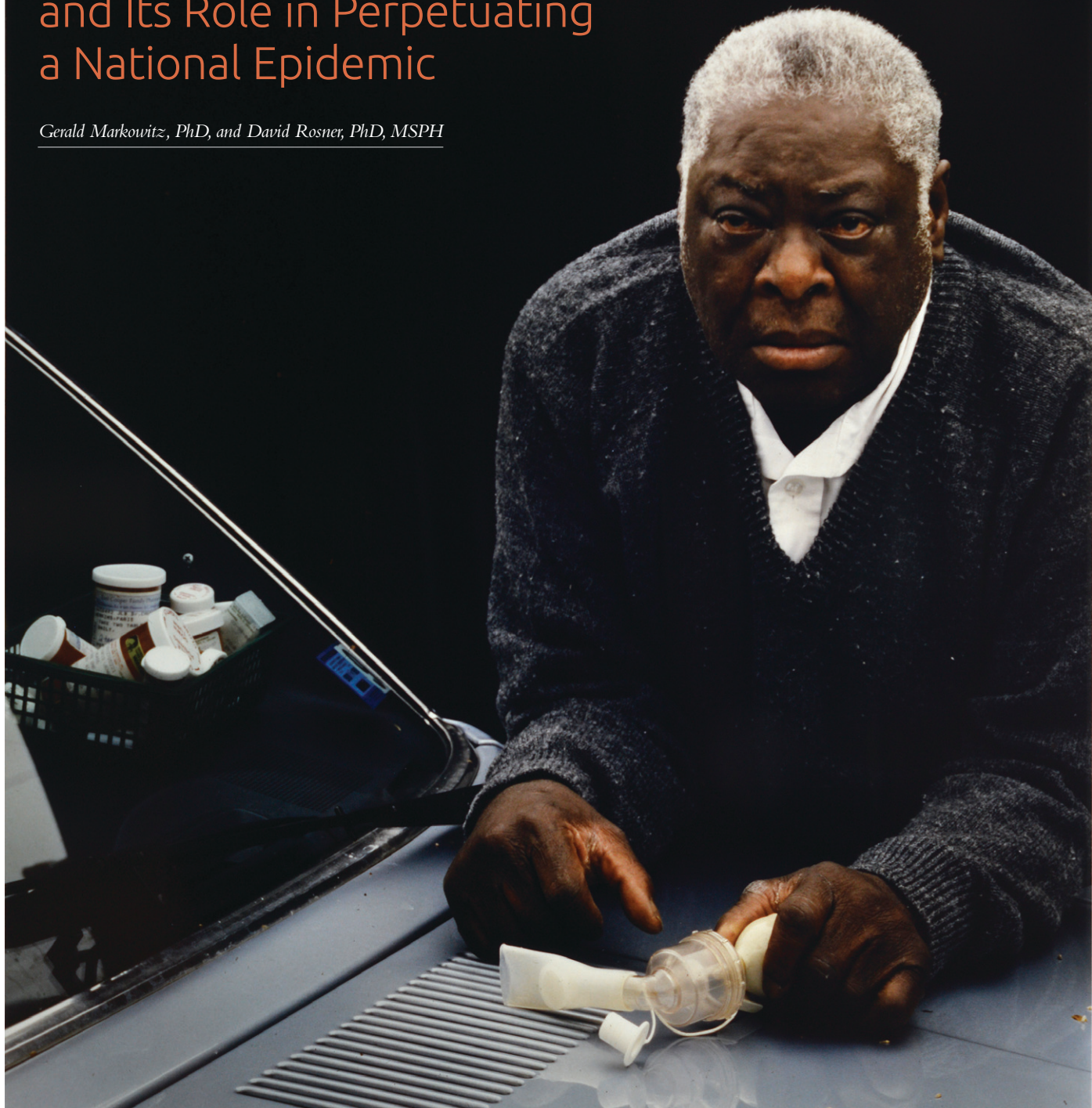


# “Unleashed on an Unsuspecting World”: The Asbestos Information Association and Its Role in Perpetuating a National Epidemic

*Gerald Markowitz, PhD, and David Rosner, PhD, MSPH*



Paris Jenkins, Charleston, SC.

*Note.* Mr. Jenkins was a former boilermaker at the Charleston Naval Shipyard. In this photograph he was disabled with asbestosis, and succumbed to mesothelioma.

*Source.* Photo by Bill Ravanesi, producer of the documentary exhibition, “Breath Taken: The Landscape & Biography of Asbestos.” Printed with permission.

Examining previously underused corporate documents, we revisit the story of the Asbestos Information Association/North America, an industry trade group that sought in the early 1970s to counteract the growing public attention to, and government regulation of, asbestos as a serious threat to workers and consumers. From the mid-1960s through the early 1970s, according to its own spokesperson, asbestos was exposed as “probably the most hazardous industrial material ever unleashed on an unsuspecting world.” In retrospect, thousands of lives may have been saved if the Asbestos Information Association had publicly acknowledged this earlier. (*Am J Public Health*. 2016;106: 834–840. doi:10.2105/AJPH.2015.303023)

“My answer to the problem is: if you have enjoyed a good life while working with asbestos products why not die from it. There’s got to be some cause.”

—E.A. Martin, *Bendix Corporation*, to Noel Hendry, *Canadian Johns-Manville Corp.*, 1966.<sup>1</sup>

In the middle decades of the 20th century, asbestos, a mineral with insulating and fire-resistant properties, was widely distributed throughout the American landscape. A material used for a very limited number of purposes in the 19th century, by the 1960s it was used in thousands of household and industrial products, including floor tiles, paints, roofing materials, caulks, plastics, and even Christmas tree “snow.”<sup>2</sup> There is a very rich literature on the history of the asbestos industry. Various scholars have documented what the industry did to hide information and therefore delay action that might lead to restrictions on its use.<sup>3</sup> In short, these authors have illustrated that, as with the tobacco and lead industries, the dangers of asbestos and its specific relationship to cancer were extensively reported on in the medical literature but minimized and even hidden by various companies and individuals.

We focus on the early 1970s, specifically the Asbestos Information Association/North America (AIA/NA), an industry trade group that had international ties to and worked in tandem with the “British Asbestos

Information Committee and Asbestosis Research Council, and similar groups in France, the Benelux countries, and Scandinavia.”<sup>4</sup> Established in December 1970, the same month that the OSH Act was signed into law, its goal was to counteract the growing public attention to and government regulation of asbestos as a serious threat to workers and consumers. We analyze how the industry sought to shape public opinion and regulatory policy.

The AIA claimed that as a result of its efforts, the Occupational Safety and Health Administration (OSHA) regulations adopted in 1972 incorporated most of their suggestions, especially that asbestos could continue to be used in a wide variety of consumer products without any warnings about the danger of cancer.<sup>5</sup> This was despite a rich historical literature on asbestosis, lung cancer, and mesothelioma dating to early in the 20th century.<sup>6</sup>

The AIA was born of Johns-Manville’s public relations efforts. In October 1970, the Public Relations Subcommittee of Johns-Manville’s Environmental Health Task Force had a meeting with representatives from Hill & Knowlton, a public relations

firm, to discuss the formation of an organization to address the growing attention to the health effects of asbestos products they feared could lead to a ban. Therefore, from its formation the AIA was a creature of industry and of the Hill & Knowlton public relations firm, now infamous for developing strategies to counteract challenges to a variety of polluting industries, including tobacco, lead paint, and asbestos.<sup>7</sup> Matthew Swetonic, a graduate of the Columbia School of Journalism whose initial job was in the public relations department of Johns-Manville in the 1960s, became the first executive secretary of the AIA.<sup>8</sup>

He related the AIA’s transformation from an “information” organization to a defender of asbestos:

In our original concept the Association would limit its activities to providing accurate, unbiased information on asbestos and health to the press, the public and to interested politicians and other government officials. . . . [But] fortunately—and properly—the Association has had the wisdom to alter its original limited concept of its proper functions, and now endeavors to assume whatever activities and respon-

sibilities it deems necessary to protect the interests of the asbestos manufacturing industry in the United States vis-a-vis asbestos-health.<sup>9</sup>

Within months of its formation, the AIA had made the shift. One of the first tests of its true mission came in early May 1971, when the International Ladies Garment Workers Union held a news conference with Dr. Irving Selikoff, the nation's foremost expert on asbestos-related diseases, to call attention to the fact that asbestos was used in certain imported women's coats, potentially creating dangerous consumer exposures. At the conference, Selikoff was asked "what a consumer should do if she discovered she owned such a coat," to which he replied, "bury it."<sup>10</sup> Selikoff went to the AIA with a specific request that, as an information service, the AIA should publically "condemn the use of asbestos" in the coats. However, Swetonic told the AIA's board of directors,

To condemn the use of the cloth on the basis of its being a health hazard would place the AIA/NA in the position of giving tacit approval to the contention that even slight exposure to asbestos can be hazardous, [which would] completely undercut our current efforts to defeat local, state, and federal moves to ban asbestos-containing products.<sup>11</sup>

The AIA did not take a public stand, realizing that it could not both provide "accurate information" and, as an instrument of this industry, defend its interests. It had to choose. And it did.

The activities of the AIA were generally defensive. By October 1971, the AIA's public relations campaign provided its vision of the health hazards of

asbestos. In a pamphlet titled "Asbestos and Health: Questions & Answers," the AIA asked, "Can a little bit of asbestos kill you?" to which it responded, "Long term medical studies of occupationally exposed workers show that low to moderate levels of exposure to asbestos do not lead to an increased rate of disease."<sup>12</sup> This was despite the vast literature that had accumulated since the early 20th century that indicated the opposite. As early as the 1930s, researchers documented that asbestos dust produced asbestosis even at concentrations invisible to the naked eye. With the recognition of the relationship of asbestos to cancer it became clear that virtually any occupational exposure might cause disease and death.<sup>13</sup>

The AIA pamphlet also posed the question, "To what extent is asbestos an occupational health hazard?" The AIA acknowledged that asbestos-related diseases were not a recent discovery; they dated back at least to 1930.<sup>14</sup> But, it argued, those diseases did not reflect the kinds of conditions that workers faced in the 1970s and were a product of practices that had long been abandoned or improved, "when the dust control equipment in use was not as efficient or as sophisticated."<sup>15</sup>

This was a disingenuous interpretation of the historical knowledge of the dangers of asbestos. Since the 1930s clinicians had been discovering lung cancers in workers exposed to asbestos.<sup>16</sup> By the 1950s, major surveys and an epidemiological study by Sir Richard Doll confirmed the observations of clinicians, pathologists, and radiologists worldwide who had documented lung cancer in asbestos workers.<sup>17</sup> Along with these observations went a critique of the relationship between the amount of exposure

and the safety of asbestos. Henry Smyth, who was research director at the Mellon Institute and a long-time employee of Union Carbide, wrote that cancer made the older threshold limit values almost irrelevant: "At this time it is prudent to set the standard for a carcinogenic substance substantially at zero."<sup>18</sup> Irving Selikoff succinctly pulled together the emerging consensus about the irrelevance of the threshold limit value as a measure of safety when speaking of asbestos and cancer in his classic 1964 article in the *Journal of the American Medical Association* "Asbestos Exposure and Neoplasia." "Building trades insulation workers have relatively light, intermittent, exposure to asbestos," he noted. And yet these workers had very elevated rates of asbestosis, lung cancer, and mesothelioma.<sup>19</sup>

In 1971 OSHA issued an "emergency standard" for exposure to asbestos dust of 12 fibers per cubic centimeter, which was dramatically lower than the level of exposure first established by the American Conference of Governmental Industrial Hygienists in 1946 of five million particles per cubic foot (roughly equivalent to 30 fibers per cc). In 1972 the National Institute for Occupational Safety and Health (NIOSH) proposed to significantly reduce the permissible exposure limit to two fibers per cubic centimeter for protection against asbestosis, acknowledging that there was "insufficient information to establish a standard to prevent . . . asbestos induced neoplasms by any all-inclusive limit other than one of zero."<sup>20</sup> This proposed regulation was perceived as a dire threat to the asbestos industry and led the AIA to appeal to OSHA for restraint. The immediate problem, the industry argued, was that "past experience" proved that for

“a sizable number of operations it will be impossible to reduce the levels to two fibers, no matter how much money is spent,” and in light of the uncertainty of what constituted safety, it would be unfair to adopt an unworkable standard. “The simple truth is that no one, NIOSH included, knows for sure what a safe occupational standard should be.”<sup>21</sup>

NIOSH and OSHA sought to place greater and greater limits on asbestos exposures. The government argued that because of the lack of knowledge about what level of exposure could be safely tolerated, prudent public health practice demanded precaution in the form of lowered exposures. The AIA took that argument and turned it on its head: because no populations have been consistently exposed at the levels NIOSH had suggested and because there were no studies that “would suggest an excess of malignant tumors among persons exposed to no more than 2 asbestos fibers per cc of air. . .,” there was no scientific justification for setting levels so low.<sup>22</sup> As a political agency, OSHA adopted a pragmatic approach, setting the limit at five fibers per cubic centimeter in 1972 to be reduced to two fibers per cubic centimeter in 1976, giving the industry four years to reduce exposure to NIOSH’s recommendation. OSHA stated that this would reduce the number of cancers while not necessarily eliminating all of them.<sup>23</sup>

The AIA also objected to the recommendation by the OSHA Advisory Committee that the warning label include the word “cancer” because

such a label would spell the demise of numerous major product lines of the industry, including vinyl asbestos floor tile, asbestos pipe, and any other



product that is sold directly to the consumer market. . . .<sup>24</sup>

This objection was derived from the industry’s contention that such a warning was not necessary because “the majority of asbestos-containing products . . . [were] locked in,” that is, bonded with various resins and other stable materials.<sup>25</sup> A few months later, Swetonic privately acknowledged the limits of his publically stated position. Using the example of cement pipe with asbestos embedded in it, he described the very problem that had been identified historically. “The field cutting or trimming of asbestos-cement pipe, might produce levels in excess of the standard, but only for the man doing the actual cutting and only intermittently or rarely.” But he opposed placing a warning

on such asbestos-containing products because it would “alarm all those handling the product, when only one man has a potential excess exposure.”<sup>26</sup>

In June 1973, less than a year after Swetonic had written to member companies about labeling asbestos products, he gave an address to the Asbestos Textile Institute, an older, more narrowly focused asbestos trade association. In this private address, Swetonic said, “The medical literature is full of solid evidence linking asbestos to disease,” citing “more than 2,000 medical articles dealing with the health risks of asbestos.”<sup>27</sup> These were primarily aimed at the medical and professional communities, but he observed, “Starting with Paul Brodeur’s infamous *New Yorker* article of March, 1968, asbestos has since grown into an

The JM Jeffrey Asbestos Mine, Asbestos, Quebec.

*Note.* The Town is positioned around the rim of the pit, which measures about 1 mile in length and 1200 feet deep. Most of the asbestos sold from this mine was being exported to third world countries. In 1988 the mine operated 364 days, on a double shift. This was the largest chrysotile asbestos mine in the western world.

*Source.* Photo by Bill Ravanese, producer of the documentary exhibition, “Breath Taken: The Landscape & Biography of Asbestos.” Printed with permission.

item of major press interest.”<sup>28</sup> As a result, public relations was now “the single largest consumer of time, effort and money within the Association.”

This publicity was overwhelmingly negative, and the AIA had done all it could “to present the press with a balanced view of the asbestos–health situation.”<sup>29</sup> He told the audience that the AIA had prepared and printed an Asbestos and Health Information File, “which we have mailed to some 3,000 newspapers, magazines, trade publications, radio and TV stations, science writers, etc. across the United States.”<sup>30</sup> In addition, the AIA had disseminated “timely, constructive news releases and articles” and prepared “carefully selected responses to editors as a result of ‘damaging, irresponsible stories.’”<sup>31</sup> But now a new approach was needed. According to Swetonic, “The press relations battle will . . . be won, not when the media starts to print positive or balanced articles about asbestos, but when the press ceases to print anything about asbestos at all.”<sup>32</sup> Ironically, the Asbestos Information Association saw as its new goal the exact opposite.

From Swetonic’s viewpoint not all was lost, despite the spate of negative publicity about asbestos. As he told the ATI, “Having [heard] the bad side of the public relations problem, it’s time for some good news.” “The good news is that despite all the negative articles on asbestos–health that have appeared in the press over the past half dozen years, very few people have been paying attention.” The AIA hired a prestigious public relations firm that interviewed “more than 2,000 demographically selected Americans,” reporting that “only 22% of the American public are aware of the health hazards of asbestos.” Of these,

80% considered it “a hazard only to those who are occupation–ally exposed,” a result that he thought “should be reassuring.”<sup>33</sup>

Swetonic understood the irony of what he was saying. Here was an information service that was celebrating that the public was not understanding the information that was being publically reported. As Swetonic told the AIA board of directors six months later, the results of their survey “show that the average man has little concern with or awareness of the health problems being associated with asbestos.”<sup>34</sup>

Although the industry took solace in the public’s lack of understanding, they worried that federal regulators might act anyway. The AIA feared that even though OSHA’s permissible exposure limit was about to be reduced to two fibers per cubic centimeter in 1976, there would be continuing pressure to reduce it further, a fear confirmed when NIOSH proposed such a reduction to 0.5 fibers per cubic centimeter in 1975 and then 0.1 fibers per cubic centimeter in 1976, then considered the lowest detectable level.<sup>35</sup>

Guy G. Gabrielson Jr, the vice-president of the AIA, reported to his membership the position OSHA officials had taken at an AIA–sponsored Industry–Government Conference in September 1976. OSHA “seems to say that there is no threshold,” he told his members. “You get to zero risk at zero exposure, and in the case of all diseases that will occur during a working lifetime.” He reported that the OSHA official “seemed to say . . . that the only way we can be sure that there is no risk of disease is to ban asbestos.” This was a position that was the same as NIOSH’s recommendation in 1972, when they

argued, “To prevent such diseases including asbestos–induced neoplasms” only a level of exposure approaching zero could truly be protective.<sup>36</sup> In 1976, NIOSH went further, confirming the association’s fears, asserting that when considering cancers, “only a ban can assure protection against effects of asbestos.”<sup>37</sup>

Gabrielson made clear that this was untenable for the asbestos industry: “We can’t go to zero risk.” Rather, the industry had to reject OSHA’s and NIOSH’s position by arguing that the “two fiber level is sufficient to protect our work force during a working lifetime,” although he “admit[ed]” that they could not “prove that, particularly in the case of mesothelioma.”<sup>38</sup>

At every stage of the standard–setting process, the AIA fought a rearguard action to limit the burden any regulation might place on them, especially an effective ban on asbestos exposure. Swetonic claimed credit for getting OSHA in 1972 to accept most of AIA’s recommendations, arguing that its success was “a gauge of the effectiveness of the total industry involvement in this most crucial matter.”<sup>39</sup> He pointed out that there were 11 major parts to the OSHA standard, and of these, “the industry position was accepted totally by OSHA on nine of the eleven, about 50 per cent on a tenth, and totally rejected on only one.” In 1976, Gabrielson outlined a program to forestall government action to reduce the permissible exposure limit:

I have recommended to the Executive Committee of the AIA/NA that we use every tool in our command to make our point with the regulatory authorities, that we exhaust our administrative remedies, and if at that point we still

do not have the kind of standard we think we require to run our businesses that we go ahead and go to court to challenge an unsatisfactory regulation. I believe the system permits us to do this and we can do that with a clear conscience.<sup>40</sup>

The industry believed it was under assault not only from government regulators but also from the courts, where diseased workers were beginning to bring liability suits. In 1971 the *Borel v. Fibreboard Article Products Corporation* decision provided the basis for thousands of liability lawsuits against asbestos manufacturers, such as Johns-Manville, Raybestos, and companies that made products out of asbestos. By 1976, the effects of these lawsuits were having a dramatic impact on the industry. The AIA noted “problems confronting the industry in regard to cancellation of product liability insurance coverage, increases in product liability insurance premiums and higher deductible features.”

At its board of directors’ meeting in December 1976, Vice-President Gabrielson feared

that some customers of Association members view the product liability problem as an indication that an impartial judge, i.e., the insurance companies, has come to the conclusion that asbestos is a more hazardous material than industry has told them.<sup>41</sup>

If it was to survive, the industry had to develop a coordinated legal, public relations, and medical program to counter the growing threat. They hired Phillip Enterline, then chair of the Biostatistics Department at the University of Pittsburgh, to write a state of the art review of the literature on asbestos and disease to prepare for coming

lawsuits. They also began to interview “physicians around the country who might qualify as expert witnesses in 3rd party litigation.”<sup>42</sup> They also began to hire researchers to “prove” that the main threat came from crocidolite, “blue asbestos,” and amosite, not chrysotile, the mainstay of the American asbestos industry.<sup>43</sup>

In the succeeding decades the asbestos industry devoted huge resources to recruiting scientific experts, lawyers, and medical personnel to fight the lawsuits brought by thousands of victims of their “magic mineral.” In addition, from the 1980s through at least the first decade of the 21st century the AIA continued its rearguard action to fight warning labels on asbestos products, oppose a ban on the uses of asbestos, and in general defend the interests of the industry.<sup>44</sup> Workers and family members dying from asbestosis, lung cancer, and mesothelioma would drive major corporations like Johns-Manville into bankruptcy.

At the same time that victims were holding companies accountable, OSHA was promulgating new, lower and lower standards (the permissible exposure limit was reduced to 0.2 fibers per cubic centimeter in 1986 and, in 1994, two decades after NIOSH first proposed it, a 0.1 fibers per cubic centimeter permissible exposure limit). National and international organizations such as the International Agency for Research on Cancer, the International Labour Organization, the World Health Organization, and NIOSH concluded that all forms of asbestos were human carcinogens. Despite the most fervent efforts of the industry to protect itself from lawsuits, the asbestos industry became nearly as notorious as the tobacco

industry in the public mind.

Matthew Swetonic, the first executive director of the AIA, who later worked for the tobacco industry as he had for asbestos manufacturers, declared the “death of the asbestos industry” in the 1990s. “What happened?” he rhetorically asked. “What drove that once mighty industry into the dust? It’s simple,” he said. “During a relatively short period of time from the mid-1960s through the early 1970s, the ‘magic mineral’ was exposed for what it really was—probably the most hazardous industrial material ever unleashed on an unsuspecting world.” Swetonic spoke with sardonic authority: “I know. I was there.”<sup>45</sup> In retrospect, thousands of lives may have been saved if he, and the Asbestos Information Association, had said this earlier. **AJPH**

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through the cooperative efforts of the Center for the History and Ethics of Public Health, Columbia University; City University of New York; and the Center for Public Integrity. The authors have appeared as expert witnesses on behalf of plaintiffs in asbestos lawsuits.

#### ENDNOTES

1. E. A. Martin, Bendix to Noel Hendry, Canadian Johns-Manville Corporation, September 12, 1966.

2. See E. R. A. Merewether and C. W. Price, *Report on Effects of Asbestos Dust on the Lungs and Dust Suppression in the Asbestos Industry* (London, UK: Her Majesty’s Stationary Office, 1930) for a discussion of the growing uses of asbestos in the 1930s.

3. See, e.g., Barry I. Castleman and Stephen L. Berger, *Asbestos: Medical and Legal Aspects*, 5th ed. (Englewood Cliffs, NJ: Prentice Hall Law and Business, 1993); Paul Brodeur, *Outrageous Misconduct: The Asbestos Industry on Trial* (New York, NY: Pantheon Books, 1985); Jock McCulloch, *Asbestos: Its Human Costs* (St Lucia, Australia: University of Queensland Press, 1986); Jock McCulloch, *Asbestos Blues: Labour, Capital, Physicians and the State in South Africa* (Bloomington, IN: Indiana University Press, 2002); Geoffrey Tweedale, *Magic Mineral to Killer Dust: Turner & Newall and the Asbestos Hazard* (Oxford, UK: Oxford University Press, 2000); David Egilman, “Dust Diseases and the Legacy of Corporate Manipulation of Science and Law,” *International Journal of Occupational and Environmental Health* 20, no. 2 (2014): 115–125. Jock McCulloch and Geoffrey Tweedale’s, *Defending the Indefensible: The Global Asbestos Industry and Its Fight for Survival* (Oxford, UK: Oxford University Press, 2008) provides an important perspective on the asbestos story, including the point that the Asbestos Information Association was part of an international effort to defend “the indefensible.”

4. Asbestos Information Association, The Asbestos Information Association/North America (Washington, DC, ca. 1972), 3.

5. Asbestos Information Association, Chart comparing OSHA, National Institute for Occupational Safety and Health, and industry-suggested regulations, attached to Swetonic to AIA/NA Member Companies, June 12, 1972. This study is based upon an examination of previously underused corporate documents now available through the discovery process of lawsuits against the asbestos industry. These documents are publically available on the Web site <http://www.toxicdocs.org>, sponsored by the Columbia University Center for the History and Ethics of Public Health, Graduate Center of the City University of New York, and the Center for Public Integrity.

6. Merewether and Price, *Report on Effects of Asbestos*, 9.
7. Public Relations Subcommittee, Environmental Task Force, Johns-Manville Corporation, "Report of Meeting," October 16, 1970. For extended discussions of the role of Hill & Knowlton in developing strategies, see Allan Brandt, *The Cigarette Century: The Rise, Fall, and Deadly Persistence of the Product That Defined America* (New York, NY: Basic Books, 2007) and Robert Proctor, *Golden Holocaust: The Origins of the Cigarette Catastrophe and the Case for Abolition* (Berkeley, CA: University of California Press, 2011).
8. M. M. Swetonic, "Death of the Asbestos Industry," in *Crisis Response: Inside Stories on Managing Image Under Siege*, ed. J. Gottschalk (Detroit, MI: Gale Research, 1993), 290.
9. Matthew Swetonic, executive secretary, Asbestos Information Association/North America, "Why Asbestos?" Presented at the Asbestos Textile Institute, Arlington, VA, June 7, 1973.
10. H. Koshetz, "Coats With Asbestos in Fabrics Termed Hazardous," *New York Times*, May 4, 1971, 42.
11. M. M. Swetonic, coordinator, Special Projects, Asbestos Information Association to Board of Directors, May 4, 1971; Swetonic to F. J. Solon Jr, et al., "Re: Asbestos in Women's Coats—Test Results," Confidential, June 21, 1971.
12. Asbestos Information Association, "Asbestos and Health: Questions & Answers," ca. October 1971.
13. Waldemar Dreesen, J. M. Dallaville, et al. *A Study of Asbestosis in the Asbestos Textile Industry* (Washington, DC: Government Printing Office, 1938), 90–94; Warren A. Cook, "Occupational Disease Hazard," *Industrial Medicine* 11 (April 1942): 193–197. Also State of Connecticut, Bureau of Occupational Diseases, State Department of Health, *Forty-Ninth Report for the Year Ended June 30, 1934* (Hartford, CT, 1934); David S. Beyer, "The Mechanical Control of Occupational Diseases," *National Safety News* (August 1933): 21–22, 34; National Institute for Occupational Safety and Health, "Criteria for a Recommended Standard, II-2.
14. Asbestos Information Association/North America, *Asbestosis and Health: Information File* (New York, NY, 1973).
15. Asbestos Information Association/North America, *Asbestos and Health*.
16. See, e.g., K. M. Lynch and W. Atmar Smith, "Pulmonary Asbestosis III: Carcinoma of Lung in Asbestos-Silicosis," *American Journal of Cancer* 24 (1935): 56–64; Herbert B. Holleb and Alfred Angrist, "Bronchiogenic Carcinoma in Association With Pulmonary Asbestosis," *American Journal of Pathology* 18 (1942): 123–131; W. C. Hueper, *Occupational Tumors and Allied Diseases* (Springfield, IL: Charles C. Thomas, 1942); Great Britain Ministry of Labour, *Annual Report of the Chief Inspector of Factories for the Year 1947* (London, UK: His Majesty's Stationary Office, 1949), 70; "Asbestosis and Cancer of the Lung," *Journal of the American Medical Association* 140, no. 15 (1949): 1219–1220.
17. R. Doll, "Mortality From Lung Cancer in Asbestos Workers," *British Journal of Industrial Medicine* 12, no. 2 (1955): 81–86.
18. H. F. Smyth, "Improved Communication—Hygienic Standards for Daily Inhalation," *American Industrial Hygiene Quarterly* 17, no. 2 (1956): 129–136; "Symposium on Threshold Limits," *American Industrial Hygiene Quarterly* 17, no. 3 (1956): 286.
19. Irving J. Selikoff, J. Churg, and E. Cuyler Hammond, "Asbestos Exposure and Neoplasia," *Journal of the American Medical Association* 188, no. 1 (1964): 22–26.
20. National Institute for Occupational Safety and Health, "Criteria for a Recommended Standard," II-2.
21. Matthew M. Swetonic, executive secretary of the Asbestos Information Association and manager of Special Projects in the Public Affairs Section for Johns-Manville, *Official Report of Proceedings Before the U.S. Department of Labor, in the Matter of Standard for Exposure to Asbestos Dust, Proposed Rule Making*, March 15, 1972.
22. *Asbestos Industry Response to Occupational Safety and Health Administration. Notice of Proposed Rule Making for Occupational Exposure to Asbestos*, April 9, 1976.
23. Swetonic to Member Companies, June 12, 1972; Federal Register, title 29—Labor, Chapter XVII—Occupational Safety and Health Administration, Department of Labor, Part 1910—Occupational Safety and Health Standards, "Standard for Exposure to Asbestos Dust," *Federal Register* 37 (1972): 11318–11322.
24. Swetonic, *Official Report of Proceedings*.
25. Swetonic was, of course, correct in saying that when asbestos was "bound" in a product, it did not present a danger to workers or the public. However, he ignored the longstanding historical understanding, going back to 1932, that "the sawing, grinding and turning in the dry state of articles composed wholly or partly of asbestos" represented a danger to those who would breathe the released asbestos fibers. E. R. A. Merewether, *Memorandum on the Industrial Diseases of Silicosis and Asbestosis* (London, UK: His Majesty's Stationary Office, 1932), 12.
26. Swetonic to Member Companies, July 12, 1972.
27. Swetonic, "Why Asbestos?"
28. Paul Brodeur, "The Magic Mineral," *New Yorker*, October 12, 1968, 117–165.
29. Swetonic, "Why Asbestos?"
30. Ibid.
31. Asbestos Information Association, Board of Directors Meeting, Minutes, December 6, 1973.
32. Swetonic, "Why Asbestos?"
33. Ibid. The actual survey was conducted by the Opinion Research Corporation, the prestigious organization founded by George Gallup in 1938 and continuing today.
34. Asbestos Information Association, Minutes.
35. Friction Materials Standards Institute, Asbestos Study Committee, "Minutes of Meeting," October 24, 1975; National Institute for Occupational Safety and Health, *Revised Recommended Asbestos Standard* (Washington, DC: Department of Health, Education and Welfare; Public Health Service; Centers for Disease Control and Prevention, December 1976), 93.
36. Gabrielson GG Jr, vice-president, Asbestos Information Association/North America, Third Annual Industry-Government Conference, Arlington, VA, September 8–9, 1976 (Washington, DC: Asbestos Information Association, 1976). National Institute for Occupational Safety and Health, "Criteria for a Recommended Standard," II-2.
37. National Institute for Occupational Safety and Health, "Revised Recommended Asbestos Standard," 93.
38. Gabrielson, Third Annual Industry-Government Conference.
39. Swetonic, "Why Asbestos?" See also McCulloch and Tweedale, *Defending the Indefensible*, 107.
40. Gabrielson, Third Annual Industry-Government Conference.
41. Asbestos Information Association, Board of Directors Meeting, December 9, 1976.
42. Asbestos Information Association, Executive Committee Meeting, December 8, 1976.
43. See McCulloch and Tweedale, *Defending the Indefensible*.
44. See, e.g., 117 F. 3d 891, *Asbestos Information Association v. Robert B. Reich*, 17 O.S.H. Cas. (BNA) 2089, 1997 O.S.H.D. (CCH), July 24, 1997. <http://openjurist.org/117/f3d/891/asbestos-information-association-north-america-v-b-reich> (accessed November 17, 2015); as of 2011, the organization was submitting a "short form" income tax return. Attached to Deposition of Bobby J. Pigg, June 18, 2013.
45. Swetonic, "Death of the Asbestos Industry," 290.