

"Controlled Use" of Asbestos

The term "controlled use" has been used by the asbestos industry to present a picture of an industrial hazard that is not a threat to health because of precautions taken in the manufacture and use of asbestos products. This is a critical review of the use of that term as essentially sales propaganda, having never been reflected in actual practice where asbestos and asbestos products have been used. Particular attention is directed to asbestos cement (A-C) products, which now account for over 90% of asbestos use worldwide.

Prior to the era of regulation starting in the 1970s, which Hyderabad Industries' Dr. Rao incorrectly refers to as a "period of ignorance on asbestos health hazards,"¹ members of the Asbestos Cement Producers Association in the United States worked to develop a brochure for users of A-C products. There was strong reluctance by some firms to include any health warning information, and in 1970 the group rejected a recommendation by some members to put a warning about the hazards of sawing A-C products in the brochure.² Most of those companies have since been forced into bankruptcy proceedings over US liabilities arising from their longstanding failure to place health warnings on their asbestos products.

The Era of Regulation

In the early 1970s, the U.S. Occupational Safety and Health Administration (OSHA) and the U.S. Environmental Protection Agency were established, and similar new laws establishing governmental regulatory powers were enacted in

Europe and elsewhere. As OSHA moved to issue a special standard for asbestos, the industry vigorously objected to every aspect of the proposed rules. Requiring cancer warnings on asbestos products, the companies said, would devastate the makers of asbestos products, especially A-C pipe producers, whose main market was sale of conduits for drinking water supply systems. The proposed exposure limit of 2 f/cc already adopted in Britain in 1969 was objected to by the industry in the US as prohibitively costly, and it was warned that the asbestos textile industry was most at risk of losing U.S. jobs to "foreign competition."

It was true that by the end of 1973 a clear pattern had emerged, showing that asbestos textile production was being reduced in the United States and imports were increasing—but to a considerable extent, the companies supplying the U.S. market from Mexico and Venezuela were subsidiaries of U.S.-based asbestos companies. Other U.S. asbestos textile imports came from the affiliates of a Japanese company in Taiwan and South Korea. But though there was international flight in asbestos textile production, the picture of asbestos manufacturing as a whole in the 1970s was one of international double standards among the affiliates of the major asbestos-based multinational corporations headquartered in the United States, Europe, and Australia. It would soon be noticed that U.S.-based and British multinational asbestos companies operated plants in India under conditions that would have grossly violated their home-country standards.^{3,4}

The U.S. companies were able to get most of their objections to the proposed OSHA asbestos standard satisfied by the Nixon administration, in the standard adopted in 1972. The words "cancer" and "danger" were not required in the text of the warning labels, and not all asbestos products were even required to bear warning labels. OSHA did not require health warnings on all asbestos products, but relented to industry pressure and left it to the manufacturers to determine whether the short-term (15-minute) peak limit of 10 f/cc or the eight-hour-average limit of 5 f/cc (scheduled to be lowered to 2 f/cc in 1976) could be exceeded by product use. If the manufacturer determined that foreseeable use of its product would not exceed OSHA's permissible exposure limits (PELs), above, "caution" labels were not required by OSHA. OSHA stated that such an exemption to the label requirement might apply to products where the asbestos content was "modified by a bonding agent, coating," or other material that would limit the release of respirable asbestos dust. From this time on, the descriptive words "locked-in" and "encapsulated" began to appear in the statements of the representatives of the asbestos industry. Additional regulations on asbestos were issued within the next few years by the U.S. EPA and the Food and Drug Administration, and the U.S. Consumer Product Safety Commission banned asbestos in widely sold wall-board-patching compounds.

Hyderabad Asbestos regularly ran full-page advertisements from 1976 to 1980 in *Asbestos* magazine,

which closely reported regulatory developments in the United States and the world. In March and April 1980, *Asbestos* featured an international industry review on occupational health and safety too large for one issue of the trade magazine. Frequently, Hyderabad ads ran in the same issues of the magazine that contained full-page ads from Asbestos Corporation Limited (Canada) picturing the World Trade Towers, and intoning, "When life depends on it, you use asbestos" (e.g., April and October 1976; April 1977; October 1978). The manufacture of asbestos-cement products in India was up in 1975 (to over 50,000 m.t./yr), the magazine reported, by more than 50% over the volumes for the previous years (October 1976). In 1975, U.S. asbestos consumption started its long decline, which would be most precipitous in the 1980s.

Exposure of Workers Using Asbestos Cement Products

Asbestos cement products were among those referred to in industry statements as one example of products where the asbestos was "locked in" by a cement matrix that would, it was said, prevent significant exposures to airborne asbestos. In the 1970s, asbestos exposure data emerged, mainly from industry sources, showing the high exposures that could occur from certain common practices used in construction with A-C products. At a government-industry conference in 1976, a Johns-Manville official reported that use of power saws on A-C sheets could cause exposures over 250 f/cc; with well-designed and properly operated local exhaust ventilation, he said, this could be reduced to 0.8 f/cc.^{5,6,8} Such a system would include a properly designed metal hood fixed over the saw blade, connected with an exhaust hose to a fan ducted to a high-efficiency particulate air filter unit. Pictures of the hoods and hoses on power tools

with local exhaust ventilation attachments appeared for a short time in (1980-81) advertisements in *Asbestos* magazine, but these special saws and drills were rarely if ever actually used in the construction industry. When I wrote to the environmental protection chief of the government of Brazil in 1986 to ask him about this, he replied that such devices were not in use in his country and criticized the Labor Ministry as ineffective in protecting workers from such hazards as asbestos.

The Asbestos Cement Pipe Producers Association in the United States released reports in 1977 showing that abrasive disc saws, commonly used in construction work involving A-C pipe, created exposures measured at 26-109 f/cc in saw operators and 10-49 f/cc among saw operators' helpers.⁶ The industry trade association thereafter officially recommended against the use of abrasive disc saws, although the effect of this on actual practices in the construction industry, if any, is questionable. Within the next five years, most of the plants making A-C products in the United States closed down, as public awareness and concern led to a collapse in demand and a shift to safer substitute products. Japanese scientists reported quite high exposures from field cutting of A-C pipe more than ten years later. Exposures from repair work on A-C pipes using high-speed disc cutters inside and outside holes dug in the ground to gain access to the pipes were recorded as: 49-170 f/cc (mean value 92) inside the hole, and 1.7-15 f/cc outside.⁷ If this kind of extreme exposure has continued until so recently in Japan, it is reasonable to expect that it is widely prevalent in Asia and other parts of the world where A-C pipes are still widely used and there are few or no product stewardship efforts by manufacturers.

In the late 1970s, there was a scandal in Puerto Rico over housing for poor people that the gov-

ernment had constructed with A-C flat sheets and corrugated roofing from an asbestos company in Colombia. Even before the people learned that asbestos was deadly, there was much concern about the dust from winds disturbing the interior ceiling panels over the family rooms and from the occasional need to break into the walls to do plumbing repairs. After the cases came to court, the A-C houses were ordered to be carefully taken down, and 1,300 families were relocated to other housing.⁸ When I visited one of these communities, I saw a house where the man had broken an archway through one of the walls to open up the space between two of the rooms. No one had told him this was dangerous. The doctor had diagnosed bronchitis in his infant child, caused by breathing the dust created by this renovation. That child may have developed asbestosis or cancer by now. What government can hope to reach such people and extend to them the protection of public health regulations? This case demonstrates the futility of controlling the hazards of A-C materials once they are used in the construction of housing, schools, or commercial, public, and industrial structures.

Substitute Fiber-Cement Products

Under pressure from regulatory authorities, companies in Europe and Australia developed asbestos-free fiber cement products, using fibrous glass, polyvinyl alcohol (PVA), aramid fibers, and cellulose. The Swiss Eternit Group's affiliate in Costa Rica was forced to use local materials when the government rejected the idea of spending hard currency to import asbestos in 1984. The firm developed a new product using wood pulp from an indigenous pine tree, giving the new product the same warranty as the replaced asbestos product. The Australian multinational, James Hardie, developed a process using wood pulp from New Zealand to make

fiber cement sheets at its subsidiary's plant in Ipoh, Malaysia, which I visited in 1987. The company manufactures such products now in Chile, the Philippines, Australia, and New Zealand. Hardie has more recently introduced cellulose fiber cement pipes for non-pressurized uses in the United States. The French multinational firm Saint-Gobain is introducing PVA-cement technology in Brazil.

Encouraging results have been reported by Brazilian researchers with blast furnace slag and wastes such as coconut coir, sisal byproducts, waste of eucalyptus pulp, and fibrous banana plant wastes.⁹⁻¹¹ Commercial development is going forward to make corrugated sheets, with 100 percent Brazilian ownership.

The Central Building Research Institute in India has reported favorable results with coir and with bagasse.^{12,13} Both papers reported the successful development of techniques and compositions that would make boards that met international performance standards.

The use of abundant plant fibers and wastes to make fiber cement building materials—in addition to making products safer than asbestos cement—can significantly reduce the enormous environmental burden of the construction industry. It can provide building materials to poor people in rural areas. Countries can also reduce their outlays of hard currency for imports of asbestos and synthetic fibers, instead using locally available materials.

The International Program on Chemical Safety's Report on Chrysotile Asbestos

In 1993, a process began that would result in the issuance in 1998 of *Chrysotile Asbestos*, an Environmental Health Criteria Document (EHC-203) by the International Program on Chemical Safety (IPCS). IPCS was housed at the World Health Organization headquarters. Criticism of the

improper influence of business interests at IPCS came to a head in 1993, when the U.S. National Institute for Occupational Safety and Health (NIOSH) severed its link with IPCS partly over the dominance of scientists with ties to the asbestos industry in the IPCS Task Group selected to draft EHC-203. There had been continuing controversy into 1996, but still no document emerged. A distinguished group of 81 scientists wrote to the IPCS criticizing corporate influence in the development of IPCS documents on asbestos and chemicals, arguing that there was nothing new on chrysotile's toxicity that warranted the effort of a new review.

At this point, the U.S. government agencies with links to IPCS met, and a letter was issued from the U.S. State Department on June 24, 1996, detailing ways that IPCS could better disclose and prevent the harm from reliance on outside experts having financial conflicts of interest. The IPCS convened a more balanced panel of experts a week later in Geneva to complete work on the asbestos document, which then existed only in a very incomplete, unreferenced draft. The week that the expert panel set about its work, the government of France announced that it was banning asbestos products. The report ultimately published by IPCS concluded that there was no level of chrysotile exposure that was free from cancer risk, and recommended in particular that chrysotile asbestos *not* be used in construction materials.

The WTO Asbestos Case

The government of Canada reacted to the French asbestos ban (and the trend of all the countries of Europe to ban asbestos) by bringing a trade dispute at the World Trade Organization (WTO). This claimed that with regulations to protect workers, consumers, and the environment, there was no need to ban asbestos. Central to this claim was the idea

that with "controlled use" of asbestos, the remaining risks to public health were insignificant. WTO empaneled four scientific experts and arranged to hold a day of hearings in January 2000. As a scientific advisor to the European Commission defending the French ban, I attended the hearings.

In a statement filed on December 13, 1999—one month before the scientific hearings were scheduled to take place, Canada explained its use of the phrase "controlled use." The statement began with a qualification never expressed before: "Canada has advocated the use of chrysotile in high-density products only; textiles are not of that category." (During the scientific hearings in January 2000, Canada's senior attorney went so far as to assert that "Canadian asbestos is not used, cannot be used these days in the manufacture of textiles, because nowhere do we know are these textiles being now manufactured.") This unprecedented declaration did not include any explanation of how Canada restricts exports to makers of "high-density products" only in India and other countries. Indeed, the Canadian asbestos company Cassiar was advertising "high quality weaving fibre" later in the year 2000.

Canada's December 13 statement continued:

With regard to downstream use sectors, "controlled use" implies that all distributors/manufacturers of asbestos will be required to have an import permit. This permit will be withdrawn if the company does not meet the following commitments:

—to distribute its products only to companies (users) licensed to purchase these products. Those companies must have workers trained and licensed to install products, and must be in compliance with regulations. Approved users shall not resell to third parties, and any unused materials must be returned to the manufacturer;

—to provide a list of users to the responsible government agency;

—to provide products cut to specification and to establish centres equipped to cut the products to size, and where persons cutting the products are trained and are licensed to work with asbestos;

—to police downstream users in cooperation with the government. The product manufacturer visits, monitors and reports on the performance of the downstream users at regular intervals. There are penalties for failing to provide this product stewardship.

Canada's statement does *not* advocate a stewardship role for Canada and other countries that export asbestos. Nowhere does it state that asbestos-exporting countries and companies have any responsibility to assure that manufacturers meet minimum safety requirements or that violators will be cut off from supplies. Instead, the Canadian statement places the burden of surveillance and punitive action on the product-manufacturing industry (and importing governments)—even though the industry has never done such things anywhere in the world. Why are nations that import asbestos obligated to assume the cost of restraining the abuses of the asbestos industry? Presumably, so Canada can enjoy unrestricted freedom (from product stewardship) to export asbestos.

Canada's suggestion that asbestos suppliers would establish field fabrication centers to cut products is wholly implausible. One need only spend a short time in the dense traffic of Delhi, Sao Paulo, or Bangkok, for example, to doubt that the asbestos industry would provide any number of such centers—or that construction companies would regularly interrupt work to use them. Similarly, it is difficult to imagine that product manufacturers would conduct industrial hygiene surveillance of their cus-

tomers, let alone report miscreants to the government. Again, not a single asbestos product manufacturer has ever done such policing.

Even in the case of asbestos manufacturing industry and product use where regulatory restrictions had been in place for many years, WTO was told that asbestos problems remained out of control. One of the scientific experts appointed by WTO, Dr. Peter Infante of the United States, testified that OSHA, where he worked, had issued 4,000 citations in the years 1996–1998 for violations of the 1994 OSHA asbestos standard. A brake manufacturer had been fined \$125,000 for exceeding the 0.1 f/cc PEL, not providing respirators, and dry sweeping the floors, only months before the WTO hearing. None of the scientific experts appointed by WTO thought that Canada's portrait of "controlled use" bore any resemblance to reality.

Canada lost the case, lacking proof that there was some practical form of "controlled use" whereby France could reduce the hazards of using asbestos to insignificance. The WTO concluded that in the case of something whose deadly dangers were so thoroughly known as chrysotile asbestos, each country has the right to determine its own acceptable level of risk, even to the extent of banning the product from trade. The WTO, it should be noted, was a forum where those claiming that there was such a thing as "controlled use" of asbestos would receive the most receptive treatment, since Canada was the party arguing for the elimination of trade barriers. As an example of its bias, the WTO gave very limited consideration to the availability of alternatives to asbestos cement other than those products using alternative *fibers* (PVA, aramid, and cellulose) in a cement matrix. Other alternative products, such as high-density polyethylene pipe and ceiling tiles made of lightweight concrete and clay, were hardly considered at all in the WTO's decision.

The Politics of Controlling Asbestos Hazards

In the early 1990s, the government of India supported research into development of fiber-cements using plant fibers. Since then, India has established relatively high duties (70.6%) on the importation of polyvinyl alcohol (PVA) fibers, one substitute for asbestos (duty 32.6%). This was a decisive disadvantage in 2001, when Eternit Everest converted one plant in Maharashtra to make PVA cement roofing. Eternit Everest was also starting to make flat sheet products using coir and other vegetable fibers that were competitive with A-C sheets. Eternit Everest was then 52% owned by the Belgian multinational Etex, which had a global policy of not continuing to own interests in asbestos. But then Etex sold its interest to Associated Cement Companies, an Indian firm that previously owned 26% of Eternit Everest. Now that Indian interests have bought out Etex, Eternit Everest is going back to asbestos 100%.

The situation in India contrasts dramatically with that in Brazil. Unions, political leaders, asbestos victims' groups, and public health activists have combined to press for bans on asbestos nationally and locally. With the failure to incite prosecution of the leader of the ban-asbestos movement, labor inspector Fernanda Giannasi, for "criminal defamation," the dominant French multinational Saint-Gobain announced that it would get out of the asbestos mining and manufacturing business in Brazil by 2005, as it was required to do throughout Europe. Starting with the asbestos ban in Osasco, Brazil, in September 2000, bans on asbestos have been put into effect in major cities and states, including Sao Paulo and Rio de Janeiro. The Brazilian government is continuing a strong research effort into the use of locally available waste plant fibers, and Brazilian businesses are

starting to invest in making this technology a commercial reality. Following the ban in Osasco, national asbestos bans were imposed in Chile and Argentina.

The difference between India and Brazil is deeply tied up with the issues of freedom of speech and the integrity of the public health system. In India, the leading proponent of banning asbestos is Dr. T. K. Joshi, a highly credentialed, respected, and dedicated physician in the field of occupational health. Dr. Joshi faced tremendous opposition for just raising the issue of banning asbestos at the February 2001 meeting of the Indian Association of Occupational Health, IAOH.¹⁴ Since then, he has persuaded many of his colleagues, including his successor as IAOH President, Dr. G. K. Kulkarni.¹⁵ For his efforts to protect the people of India from asbestos, Dr. Joshi was threatened with the severance of his job at Lok Nayak Hospital and was not paid for more than six months. If the asbestos interests in India had been able to get the government to fire Dr. Joshi, that would carry grave implications for the future of health protection of workers in India. This led to an international campaign in support of Dr. Joshi, which was ultimately successful in helping persuade the powers-that-be to renew his appointment for another year.

Fernanda Giannasi was also targeted by asbestos interests in her country, but the courts rebuffed efforts to harass her, and her bosses in the government did not give in to pressures to take punitive measures against her. She had widespread public support both in Brazil and internationally, and the media in Brazil covered the asbestos story avidly. Having survived harassment and death threats, Fernanda Giannasi went on to receive many awards and honors in her country for her public health work on asbestos.

CONCLUSION

It is noteworthy that the two largest multinational corporations that controlled global asbestos trade and operated major interests in India 20 years ago have since gone into bankruptcy proceedings over the liabilities in the US from the many lives asbestos destroyed. Other historically dominant multinational asbestos companies in Europe and Australia have stayed in business, eliminating asbestos from their product lines. The companies remaining in asbestos product manufacturing in the world today are smaller, usually national, business entities. They are not so widely known, nor are many of them as sensitive to bad publicity as the multinational asbestos companies were. Some are run by former officers of deposed Latin American military dictatorships. Some asbestos investors and managers are opportunistic businessmen who got in when the multinationals got out of asbestos. Whether long established or new to asbestos, these people are in effect betting they can run a discredited, hazardous technology for a few more years, then close down the companies and not pay significant disability compensation to anybody. Some are also betting their blood money can corrupt governments and destroy anyone who dares to stand up to them. Asbestos companies are doing quite a brisk business in India, still answering critics with the mantra of "controlled use."

"Controlled use" of asbestos is the asbestos industry's way of referring to business as usual with a false face. Really well controlled use of asbestos has never existed anywhere in the world, and it isn't being invented anywhere today. If the remaining countries using asbestos now are unable even to halt the continuing use of it in new construction material and vehicle brakes, what hope can there be that they will ever attain that elusive,

changed, and desired state of existence, "sustainable development"? Currently available technology of vegetable waste fibers in cement composites is an especially encouraging alternative to asbestos cement.

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