trial Union Department of the AFL-CIO in 1972, OSHA adopted its first cancer-related work standard, a standard for asbestos exposure.

Asbestos. Fifty years ago, who would have believed that the so-called *mineral of a thousand uses* would one day prove to be a cancer-causing agent with enormous destructive potential? Asbestos is a fibrous silicate mineral that is remarkably effective for insulation and fire-resistance. These qualities have led to its widespread use in shipbuilding, construction work, and in many *other industries*. Each year, *over two billion pounds* of asbestos find their way into everyday products. A partial list includes floor tiles, shingles, roofing, wallboard, pipes, potholders, ironing-board covers, electrical insulation tape, filters in gas masks, filters for processing fruit, wine, and pharmaceuticals, plastics, brake linings, clutch facings, carpets, plaster, stucco, cement, and automobile undercoatings. In the words of the writer Paul Brodeur, "There is not an automobile, airplane, train, ship, missile or engine of any sort that does not contain asbestos in some form or another, and it has found its way into literally every building, factory, home, and farm across the land."

Of course, this cornucopia of asbestos products would not be possible without workers. Millions of workers — perhaps as many as five million — are in intimate occupational contact with asbestos. It is not only those who mine, load, truck, and mill the asbestos who breathe and swallow hundreds of millions of microscopic asbestos fibers each workday. Those who work with the milled product are also inhaling and ingesting the fibers — carpenters, insulation workers, heating-equipment workers, rubber workers, asbestos cement makers, putty manufacturers, brake lining producers, roofing and tile manufacturers — the list is almost endless. These are the men and women who, knowingly or unknowingly, risk their lives with their labor because, as it *turns out*, asbestos is every bit as lethal as it is useful.

British studies dating back to the 1930's established airborne asbestos fibers as a highly dangerous substance. But the studies conducted in the 1960's by Dr. Irving Selikoff of New York

Mount Sinai Medical Center established, more conclusively, the [illegible] extent of the danger. Working with New York Local 12 and Newark Local 32 of the International Association of Heat and Frost Insulators and Asbestos Workers, in early 1962 Dr. Selikoff began a major epidemiologic study, one of the great medical detective stories of recent times. Selikoff and his associates pored through the unions' records, obtaining detailed work histories for a sample of 632 men who were on the union rolls as of December 31, 1942. Then they secured the death certificates for those who had died and compared the number of deaths and the causes with those of the general male population of the United States. According to standard mortality tables, 203 deaths could have been expected among the 632 workers. But there were 255, an excess of more than 25 percent. The reason for the excess: cancer. Instead of an expected toll of six or seven deaths from respiratory cancers, there were forty-five. Instead of nine or ten gastrointestinal cancers, there were twenty-nine.

Stated in different terms, Dr. Selikoff found that in the general population, about 18 percent of all Americans die of cancer. Among asbestos insulation workers, the toll approaches 50 percent. Instead of a typical lung cancer rate of 3 or 4 percent, more than 20 percent of all long-term asbestos workers die of respiratory cancer. Instead of an average stomach and colon cancer death rate of 2 or 3 percent, about 6 percent of all long-term asbestos workers succumb to these cancers. Still more die from pleural mesothelioma, an always fatal tumor that attacks the delicate membrane — the pleura — encasing the lungs; or from peritoneal mesothelioma, an equally lethal malignancy that attacks the peritoneum — the membrane lining the abdominal cavity. Mesothelioma used to be an exceptionally rare form of cancer. But no longer. About 5 percent of all asbestos workers die from mesothelioma. And case histories indicate that mesothelioma can strike those who had only brief contact with asbestos decades before the cancer actually appeared.

In October of 1972, a forty-seven-year-old financial executive died in a Los Angeles hospital, a victim of pleural mesothelioma. Learning that this malignancy was probably linked to asbestos

The Cancer Connection
And What We Can Do about It
Larry Agran
Houghton Mifflin Co. 1977

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exposure, the man and his wife used the months before his death to search his background for the origins of the disease. Finally, they hit upon something. In 1944, when he was nineteen years old, the man had worked in a West Coast shipyard for a period of three months. His job was to pack handfuls of asbestos into cloth casings and then pound the casings flat so that they could be wrapped around the miles and miles of steam pipe in warships. Working in a shed, the asbestos dust and fibers filled the air. With each breath he took, millions of tiny, indestructible asbestos fibers lodged in and around his lungs and stomach. Healthy cells, under the stress of this relentless attack, were irreversibly altered and set on a cancerous course. Twenty-seven years after this relatively brief exposure, the mesothelioma appeared in the man's body. Seventeen months later he was dead.

This was no freak incident. It was part of an emerging pattern. Many of those who worked in the shipyards during World War II — young men, housewives, and college coeds who were out of school for the summer — later developed mesotheliomas from asbestos exposures that were of no more than a few weeks' duration. Hearing of these reports, and mindful of the hard data he had himself developed, Dr. Selikoff was so alarmed at the apparent time bomb effect of decades-old asbestos exposures that he estimated that shipyard exposures alone, in the final count, would be seen as the source of many thousands of excess cancer deaths. Asbestos, it appears, is unrivaled as the most pernicious cancer hazard faced by American workers.

Armed with an overwhelming array of evidence, in the spring of 1972, Selikoff and a number of labor union leaders asked the Department of Labor's Occupational Safety and Health Administration to adopt the only prudent policy for dealing with a carcinogen of such demonstrated potency: they urged the adoption of a standard that would progressively cut the permissable levels of airborne asbestos fibers so that, within a few years' time, there would be "no detectable level" of exposure. For their part, industry spokesmen proposed a standard to maintain the status quo.

In the end, on June 6, 1972, OSHA adopted an asbestos standard that was both puerile in its construction and disastrous in its impact. The new standard required employers to cut the airborne fiber counts by about one half, thus still allowing workers to inhale many thousands of asbestos fibers with each breath taken. But the reduced exposure level, inadequate as it was, would not take effect for *four* years!

OSHA, an agency originally created to protect the health of workers, had caved in to industry pressure. In effect, the OSHA asbestos standard shunted aside what is perhaps the most fundamental fact of preventive cancer policy: *There is no known "safe level" of exposure to a cancer-causing agent.* A carcinogen is a biological explosive. It is a bomb with a delayed fuse capable of causing cancer years later among those who were once too near for too long. In 1970, the Ad Hoc Committee on the Evaluation of Environmental Carcinogens, a government-appointed committee whose members were among the nation's most respected cancer researchers, laid this finding before the Congress in the plainest terms. In the committee's words:

> No level of exposure to a chemical carcinogen should be considered toxicologically insignificant for man. For carcinogenic agents a "safe level for man" cannot be established by application of our present knowledge.

The committee called for the progressive elimination of carcinogens from the environment, insisting that the controlling principle must be that human beings have "zero tolerance" to chemical carcinogens.

Quite obviously, OSHA officials were guided by neither science nor humanitarian principles. Instead, their compass was political in nature, their goal some kind of a "compromise" on asbestos. But there can be no compromise with carcinogenic exposures. The asbestos standard now in effect is so weak in concept that it will have only marginal impact upon the cancer rates among exposed workers. In fact, in a macabre way, it will probably lead to an *increase* in the cancer toll among asbestos workers. For years, asbestos workers have been dying by the thousands from asbestosis — a noncancerous fibrosis or scarring of the

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lungs. In time, the fibrosis cripples the oxygen-exchange capacity of the lungs, eventually leading to heart failure or death by what amounts to biologic strangulation. To some extent, the reduced exposure levels adopted by OSHA will cut the asbestosis toll. Thirty-year-old asbestos workers, who would have probably died from asbestosis in their fifties, will perhaps escape that disease and live to be sixty or sixty-five, long enough to die instead from asbestos-induced cancer.

Having disposed of the asbestos issue in June 1972, lethargy once again became the top-level policy at OSHA. Months passed without any signs of movement to establish standards for a whole series of known workplace carcinogens. Impatient over the lack of action, in early 1973, the Oil, Chemical, and Atomic Workers Union and Ralph Nader's Washington-based Health Research Group filed a petition with OSHA requesting that exposure levels for ten recognized workplace carcinogens (out of perhaps 100 or more) be set at "zero tolerance"; in other words, there should be no human exposure whatsoever. Even more significantly, the petition included a request that OSHA adopt a precedent-setting permit system that would bar the use of these carcinogens unless a firm first sought and received a government-issued use permit. In this way, a company could not legally use specified cancer-causing substances until OSHA had first surveyed the work environment and certified it to be exposure-free.

A government-issued use permit. A radical concept? Hardly. In principle, a permit system is simply a licensing procedure, the same kind of licensing procedure that has become a fixed feature of American life. Virtually every motor vehicle driver in the United States must secure a license before being allowed to drive an automobile. It is an accepted verity that the government has a legitimate interest in assuring at least a minimum level of competence before allowing an individual to operate an automobile — a potentially lethal instrument. If, in the interest of public safety, nearly 100 million Americans must first secure a driver's license, then surely it is not unreasonable to require the licensing of individual companies in which potent cancer-causing substances

[illegible] being manufactured or used. That is the essential meaning of a use permit for carcinogens: it provides the leverage of a license to help assure strict adherence to standards designed to prevent job-caused cancer.

In effect, the Oil, Chemical, and Atomic Workers Union and the Health Research Group proposed that their list of ten carcinogens be treated in a way akin to the strict licensing and control provisions placed upon the transportation, manufacture, and use of radioactive materials. And with good reason: the corresponding public health hazard is the same — cancer.

One of these ten carcinogens was bis(Chloromethyl)ether, known simply as BCME. BCME is a chemical used in manufacturing resins for water purification and other industrial purposes. Rohm and Haas, a major company, first began using the substance in its Philadelphia plant in the 1940's. In 1962, the company noticed a pattern of lung cancer cases among young men in their thirties, who had worked in one of the buildings. Suspecting that a chemical used only in that building was responsible, by 1967, company-sponsored studies had revealed an increased incidence of lung tumors in both animals and humans breathing BCME; seven workers had already become cancer victims by that time. Despite the installation of better ventilation to reduce exposure to BCME, those workers who had already been exposed to the lethal chemical continued to die, and new workers continued to be exposed. But, throughout this period, the employees were never told that BCME causes cancer. By 1971, the number of lung cancer victims had increased to fourteen. Today, more than a decade after the first signs of an occupational cancer epidemic, Rohm and Haas grudgingly acknowledges more than twenty cancer deaths among exposed workers.

There is more incriminating evidence on BCME from a 1972 field study that the Department of Health, Education and Welfare (HEW) initiated at the Diamond Shamrock Chemical Company in Redwood City, California, just south of San Francisco. Beginning in the mid-1950's, workers in Diamond Shamrock's research and development laboratories were exposed to BCME. No effort was made to contain the BCME exposure until 1966,

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lowing the lung cancer deaths of two employees: one, thirty-five years old, the other, forty-eight years old. A year later, a thirty-nine-year-old man, a chemist at the plant, died of lung cancer. In 1971 another worker, thirty-two years old, died from the disease. Then two more workers were struck by lung cancer. All this in a plant that employs about 100 workers. Numbers. Ages. Dates. The human tragedy seems to be lost in the statistical litany. How many more cancer deaths would there be at Diamond Shamrock? How many elsewhere? Recent reports show that BCME — this powerful carcinogen — may be present in a wide range of industrial processes, including the manufacture of permanent press clothing.

Without a permit or licensing system, how can we possibly expect to protect workers from exposure to BCME and other deadly carcinogens? In its strongest form, a permit system would eliminate the expose-now/regrets-later syndrome. Instead, an industry producing or using specified carcinogens would be required to prove that: (1) the substances were essential to its operations; (2) there were no appropriate substitutes of lesser danger; and (3) all necessary steps were being taken to safeguard employees against any exposures whatsoever. The permit system would apply to not only the larger companies like Rohm and Haas and Diamond Shamrock, but also to the smaller outfits like Collins, Caldwell & Dague, where Joe Fitman worked.

On January 29, 1974, OSHA issued its standards for a limited series of carcinogens — the ten listed in the original petition that was filed plus four other carcinogens. There is little comfort in the content of these standards. While OSHA did institute requirements for special handling in the manufacture or use of these fourteen carcinogens, the agency refused to include a requirement insisting that there be "no detectable level" of exposure. In other words, employee exposures to these fourteen cancer-causing substances are still legally permissable. Once again, implicit in OSHA's action was endorsement of the fraudulent notion that there might be a "safe level" of exposure to a carcinogen. In addition to issuing these soft standards, OSHA rejected the all-important permit proposal. The agency made the dubious claim that initiation of such a system was beyond the

scope of its statutory authority. But, clearly, what was really involved was a management-oriented aversion to a regulatory framework that would shift the burden of proof to employers and give the benefit of the doubt to workers.

Without a permit system requiring clearance before carcinogens can be produced or used in an individual plant, OSHA will need a veritable army to enforce even the limited standards adopted to date. If, in fact, we are fighting a "war on cancer," then the foremost battlefields must be the workplaces where cancer-causing substances abound. But if this is a war, where are the soldiers? Where are the enforcers of the law, those who safeguard vulnerable employees? Right now, OSHA is little more than a ragtag bureaucracy. It numbers less than 1500 federal occupational health and safety compliance officers. And, of these, fewer than 400 are the more technically qualified industrial hygienists. It's no wonder Joe Fitman couldn't remember ever seeing any health inspectors. With the handful of compliance officers put in the field by OSHA, the odds are good that a small business like Collins, Caldwell & Dague won't be inspected more than once in twenty years.

Who is to blame for the continuing epidemic of job-caused cancer? Industry? In part. Those who recklessly subject employees to carcinogenic exposures cannot escape a major share of the blame. But there should be no illusions about this matter of social and human responsibility. Employers and managers have a mission measured in terms of productivity and profits. There is little room in that equation for considerations of employee health, particularly when the visible damage to health is deferred for many years, as it is with cancer. The assumption, then, must be that employers will do only what they are *required* to do to comply with the law.

But who establishes the requirements of the law? Here is where the larger share of the blame must be placed — on those who make the law and on those who are charged with carrying out its provisions. Those who make the law: the Congress. In 1970, the Congress took an important step forward by enacting the Occupational Safety and Health Act. It is a tough statute that provides ample authority to effectively combat the epidemic of

job-caused cancer. But in major matters of regulation the words of a statute alone are not enough; Congress must appropriate the funds necessary to administer the law. This the Congress has failed to do. OSHA's annual budget has hovered around $100 million for several years. One hundred million dollars per year — the amount spent by the Pentagon in just eight hours. OSHA needs at least ten times that much: one billion dollars per year. And it needs the money immediately to hire thousands of inspectors, industrial hygienists, and biostatisticians. The war on cancer must at last be carried into the workplaces across the land. Congress must supply the personnel to inspect the plants and factories and give American workers effective protection against job-caused cancer and other occupational diseases.

Congress can supply the personnel. It can delegate the responsibility. But what about those who are charged with carrying out the law? The Executive Branch. The Nixon and Ford administrations consistently treated the Occupational Safety and Health Act as a nuisance rather than as an opportunity. Their combined record reflects the Executive's systematic unresponsiveness to the problems of job-caused cancer and other job-related health hazards. In fact, these administrations regularly submitted such puny budget projections for OSHA that each year Congress felt obliged to add a few million dollars to the President's embarrassingly inadequate budget requests.

Inadequate budget requests are one way for the Executive to scuttle a program. Another is to appoint officials unworthy of high federal office. From the outset, OSHA's top ranks have been filled by men without distinction, by men who never really believed that the agency had a mission to protect American workers — to save lives. Sometimes their lack of dedication involved more sinister motivations — a kind of malign neglect with predictable consequences. Asbestos was the first round. The standards for fourteen carcinogens was the second round. Standards for dozens of more workplace carcinogens remain to be adopted. But already the pattern has been clearly established: OSHA is born slow and weak, a management-oriented government agency despite its location within the Department of Labor.

Frustrated at the setback on asbestos, and sensing a hidden agenda to sell out American workers, when OSHA finally held public hearings on the question of workplace carcinogens in September 1973, Sheldon Samuels, a spokesman for the AFL-CIO's Industrial Union Department, lashed out at the agency's officials for dragging their feet on the question of cancer-causing substances. Testifying before an OSHA hearing officer he said:

> This hearing could have been held more than two years ago . . . The consequence is that, as a result of two years of unjustifiable exposure to carcinogenic agents, regardless of anything done now, hundreds and perhaps thousands of men and women can be expected to experience agonizing death from cancer in the next two decades. Sir, in a truly civilized society we would hold personally responsible those who participated in this crime, both the callous political creatures and the cancer peddlers who bartered moral and statutory obligations. In a just society they would now be undergoing rehabilitation in a penal institution. Instead, they walk freely . . . as if evil is its own reward.

What Samuels suggested was in fact true. There was something far more sinister than ordinary bureaucratic sloth involved here. A year later, in a footnote to the Watergate scandal, it was revealed that OSHA had been thoroughly corrupted during its first fifteen months of operation. In June 1972, instead of being hard at work on standards to protect workers against cancer-causing agents, George C. Guenther, then head of OSHA, was busy drafting a confidential memo to higher-ups in the Department of Labor. In his memo, Guenther assured these administration loyalists that prior to election day "no highly controversial standards will be proposed by OSHA." Eager to use the agency as a prostitute for the Nixon re-election drive, he went on to stress the potential of a management-oriented OSHA as a "sales point for fundraising."

Guenther's betrayal of American workers may not have been the most notorious of the many Watergate crimes, but in time it will certainly prove to be the most deadly.