

Too high a price for safety on the job?

THE PROPOSED new rules on exposure of chemical workers to vinyl chloride gas bring into sharp focus one of the most perplexing questions facing America: How much risk to human life and health are we willing to take for the jobs and consumer conveniences provided by industry? The key word is "risk."

The evidence to date suggests overwhelmingly that the old federal safety rules limiting exposure to 500 parts of vinyl chloride in one million parts of air were too loose. Nineteen known cases of what had been considered a rare form of liver cancer have now been reported among vinyl chloride workers in this country (seven of them in Louisville) and elsewhere.

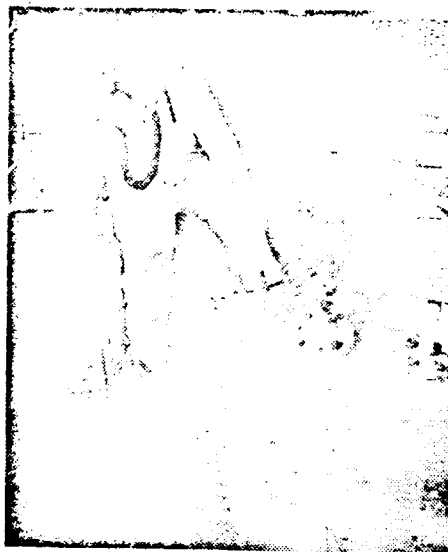
Emergency rules limiting exposure to 50 parts per million were hastily put into effect when the liver cancer hazard became apparent. Now the federal Occupational Safety and Health Administration (OSHA) proposes to require that no detectable levels of vinyl chloride gas be permitted in areas where workers may be exposed. Meanwhile, the federal Environmental Protection Agency has become concerned about the possible hazards of the gas in the atmosphere of areas around vinyl chloride plants.

The new OSHA standards, if they were successfully implemented by the industry, doubtless would end the threat to workers' safety. But three factors must be considered: (1) Chemical industry spokesmen claim that it will be prohibitively costly and/or technologically impossible to meet the new standards, especially if they become effective in July, as is now proposed. (2) Vinyl chloride is a basic material in the production of plastics used in a wide range of consumer goods and in packaging. And (3), although laboratory tests with rats suggest that exposure to 50 parts vinyl chloride per million of air, as permitted under the present emergency regulations, may be dangerous, there is no documented research so far to suggest that exposure to lower levels—10 parts per million, for example—is hazardous.

Threat to older plants

The claims of the vinyl chloride industry, of course, can be considered self-serving. But that doesn't mean they are invalid. Meeting the proposed OSHA standard of "no detectable levels" in plant areas where workers may be exposed almost surely will add significantly to production costs. And it may prove to be technologically impossible, especially at such older vinyl chloride plants as the B. F. Goodrich Company facility in Louisville, to conform with the proposed regulations.

The industry, nevertheless, cannot be allowed indefinitely to postpone steps which will protect both its workers and persons who live near its plants. A July deadline for reducing vinyl chloride to "no detectable levels" within and around its plants may be unreasonable, but clearly OSHA must continue to apply



A Goodrich plant worker emerges from a vinyl polymerization vat

pressure, and the industry just as clearly must show a good faith effort to eliminate the hazards.

OSHA, the industry and the public must face the fact that the proposed rules could force the industry to close some plants and might increase production costs so sharply that the use of plastics made from vinyl chloride would be discouraged. This, in turn, leads to the second point—the use of vinyl chloride end-products by many other industries. If the new OSHA rules force a sharp decline in vinyl chloride production, this impact could spread like ripples in a pond to other segments of the country's closely interrelated and interdependent industrial economy. Products ranging from plastic squeeze bottles to home appliances could become more expensive or simply unavailable, and jobs could be lost.

The vinyl chloride industry doubtless will make these points next month at a public hearing on the proposed OSHA rules. And industry spokesmen just as surely will argue that OSHA is overreacting to the admittedly serious liver cancer hazard, and that compromise standards should be tried.

Compromise standards, of course, involve risks. Human risk is an inescapable factor in most industrial processes, yet it is a factor that must be minimized. Underground coal mining, for example, is an occupation which almost certainly will always be more hazardous, unless it can one day be totally automated, than working on an automobile assembly line. It is also, however, an industry which is essential to the American economy and the present American lifestyle, both of which consume enormous energy.

The essential nature of the industry, however, means that the added cost of making underground mining reasonably safe can be passed on to the consuming public—unless the country is willing to pay the environmental cost of depending entirely on strip-mining for its coal.

One can argue, of course, that plastics made from vinyl chloride, unlike the energy provided by coal, are a frivolous and essentially "phony" part of the American economy and culture—something, in other words, we could do without and perhaps be better off for the deprivation.

This again, however, involves broad public preferences—the same kind of choices we face in balancing clean air against automobile production, or insect-free crops against the long-term harm of DDT and some other pesticides to our environment. It also involves jobs. No worker wants to be exposed to hazards on the job. But neither do most workers want their jobs eliminated along with the hazards.

OSHA's biggest challenge

The vinyl chloride case is only one of thousands in which OSHA, set up under a 1970 congressional act, has butted heads with industry. These clashes have been frequent and painful enough to prompt moves in Congress—including an unsuccessful effort last week—to clip OSHA's wings and to soften the alleged severity of the agency's rulings.

Perhaps, as some supporters of OSHA argue, these moves were hatched in corporate board rooms. And perhaps most industrial executives, while grumbling about "arbitrary" rulings by OSHA, actually are finding that the agency's standards can be met at increased but reasonable cost.

But the vinyl chloride case appears to present the biggest and most frightening challenge OSHA has encountered in its brief history. Ultimately, it is a challenge not just to a federal bureaucracy, but to the American people.

After next month's public hearing, it should be clearer whether OSHA is meeting or exceeding its congressional mandate. But only if voters insist that occupational safety become an issue in this year's congressional elections will it become clear whether or not the congressional mandate is also the people's.

bonds and mortgages, they will favor the United States in the future as much as they have in the past, leaving room no doubt for substantial military orders for France and the Soviet Union.

Our bankers, industrial consultants, financial advisers and salesmen are already "bumping into one another" in Beirut and Tehran eagerly offering their assistance, according to *Business Week*. Some preliminary transactions—huge stock sales, real estate deals in Oklahoma and Texas—have already been reported. Note that by the end of this year, financial experts say, a surplus of from \$40 to \$50 billion will have accrued to the oil exporting states. The prospect, therefore, is for a stimulus to the American economy of unprecedented magnitude. A tax reduction at the present time, yielding its peak effects from six to nine months from now, would serve "to gild refined gold, to paint the lily/ to throw a perfume on the violet/ to smooth the ice, or add another hue/ unto the rainbow, or with taper light/ to seek the beauteous eye of heaven to garnish"—or simply to intensify inflation.

Burns willing, I look forward then to boomy times

ahead, like 1968 when the Vietnam war was at its peak, or more so. Inflation will be kept very much alive, profits will surpass last year's lush returns, the annual salaries of GM's top executives will rise above a million, the great corporations will bid wildly for promising engineers, the average wages of big-time basketball players will top \$100,000, the Dow Jones industrial average will be zooming back to well over 1000. At the other end, pensioners, welfare recipients and others on fixed incomes will be losing out in purchasing power. The unemployed, composed of the unskilled, semi-skilled, technologically displaced and other losers, will be just about as numerous as they are now. And the fundamental problems of material shortages, environmental destruction, suburban sprawl, air and noise pollution, highway uglification, and auto congestion will be submerged in the euphoria. Also forgotten, temporarily, will be the Third World, with its population mushrooming faster than the earth's food supply can possibly be expanded, with hunger and disease spreading, eyeing balefully the techniques of violence and economic aggression used by the Arabs.

Cancer in a Spray Can

by Barbara Newman

In late January, the B.F. Goodrich Company informed the National Institute of Occupational Safety and Health (NIOSH) that four of its employees engaged in the manufacture of polyvinyl chloride (PVC), one of the most common plastics, had died within the last six years of an extremely rare liver cancer, angiosarcoma. The workers had average exposures of 19 years to vinyl chloride, the gas that is used to produce the powdery chemical, PVC, which is the basis of the plastic industry. Then three more cases were found at Goodrich. While angiosarcoma is so rare that a check of death certificates at the American Cancer Society revealed that only one of 78,000 deaths result from it, estimates are that one out of 20 deaths among vinyl chloride workers will be caused by this rare liver cancer.

On the heels of the Goodrich news, several other

companies searched their death records, and after a superficial investigation found 13 angiosarcoma cases, including fatalities at a Goodyear Tire and Rubber facility in Niagara Falls, at Union Carbide in South Charleston, West Virginia and Firestone Tire and Rubber in Pottstown, Pennsylvania. The figures are misleading because industry does not routinely study employees' deaths to determine if contact with industrial chemicals may have been involved. Moreover, diseases like angiosarcoma are so rare that they are often misdiagnosed. As Dr. John Creech, the physician at B.F. Goodrich in Louisville, says, "Most doctors . . . attribute the cause of death as something else." Dr. Marcus Key, the director of NIOSH, admits that without Dr. Creech's voluntary disclosure, "it is entirely possible that the significance of the tumors would not have been realized for several years."

Because 10,000 new and untested chemicals are each year put on the workplace, additional occupational

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cancers may yet be identified. Every year in the United States, there are more than 665,000 new cases of cancer and about 385,000 cancer deaths. The World Health Organization in 1964 estimated that 75 percent or 85 percent of all human cancers result from environmental causes. More recently, the director of the National Institutes of Health stated that there is no doubt that industrial and agricultural technologies are the major contributors to most known environmental carcinogens. The direct and indirect cost of cancer, including loss of earnings during illness and during the balance of normal life expectancy, have been estimated at \$15 billion for 1971, yet serious attention has not been given to identifying carcinogenic hazards in industry.

Dr. Irving Selikoff of New York's Mount Sinai Hospital has done much landmark research linking the inhalation of asbestos fibers with cancer and now says that the vinyl chloride illnesses will proliferate because the cancer victims that we are now seeing began work 20 years ago. According to Selikoff, "It takes 20 years or so for this cancer to become evident. There weren't that many people working with VC [two decades ago]. Many new workers joined the industry in the 1950s and 1960s and the cases of cancer and other disease that will be found among them will become evident in the 1980s and 1990s unless, of course, we find ways by research to prevent the cancers that are being incubated now within these people. Unfortunately such research is not being done."

A month ago Selikoff took his staff up to the Good-year facility at Niagara Falls and set up an improvised hospital in the local union hall. Working 12-15 hours a day, 401 workers participated in perhaps the most massive medical examination in the history of occupational health. Selikoff is now studying his findings but has already concluded that there is evidence of other PVC related liver disease, lung disease, and diseases of the skin, bones, hands and feet. PVC not only affects the liver to produce cancer but injures other tissues that it might touch.

Government research of occupational health has been very limited. The total budget for the National Institute of Occupational Safety and Health, the federal agency charged with research to protect worker safety, is under \$30 million. The NIOSH staff has only a few epidemiologists.

For years scientists and industry have known that vinyl chloride was a potential health hazard. Despite the warnings of liver damage from exposure to VC levels as high as 500 parts per million parts of air (ppm), the US government regulated VC at precisely this unsafe limit, 10 times higher than that which many companies voluntarily set for themselves. In 1961, for example, Dow Chemical voluntarily lowered the average exposure to 50 ppm for its workers. Fifty ppm is too high because there is no certain, safe exposure level

for a carcinogen. But 50 is the level at which the Labor Department's Occupational Safety and Health Administration (OSHA) set an emergency standard for vinyl chloride in early April. The OSHA action disregarded the petition of the Industrial Union Department (IUD) of the AFL-CIO and the recommendation of NIOSH that an emergency standard for VC be set at zero exposure. It also disregarded the advice of many cancer experts who in 1970 reported to the surgeon general that "no level of exposure to a chemical carcinogen should be considered toxologically insignificant for man. For carcinogenic agents a safe level for man cannot be established by application of our present knowledge."

Some of those who accept that advice view the Labor Department's action as a sellout to industry. One who holds this view is Sheldon Samuels, the head of the IUD: "... It's just cheaper to let workers die than to spend millions of dollars to control toxicity. The worker subsidizes the cost of production with his life." The cost to industry of complying with a zero standard would be in the millions of dollars, mostly for engineering costs, but also for new equipment such as safety suits with respirators. *Business Week* recently quoted Walter B. Connolly, Jr., labor counsel of Firestone Tire and Rubber Company, which operates two PVC plants, as saying, "Improvements in work practices will probably require a 100 percent increase in the work force." Lower productivity erodes profits.

The rationale the Labor Department uses to justify its emergency VC standard of 50 ppm is that the only conclusive experiments done correlating vinyl chloride and cancer (by Italian scientist Cesare Maltoni) showed tumors at 500 and 250 ppm but not at 50 ppm. Associate Assistant Secretary of Labor, Alexander Reis, who is in charge of standards for OSHA, says that the department could have been sued if it had promulgated a zero standard without conclusive scientific justification. But according to Vernon Rose, the director of the Office of Standards of NIOSH, bio-statistical extrapolations of Maltoni's experiments show that angiosarcoma would be expected to develop at an exposure level of 50 ppm. In the letter of transmittal to OSHA in which NIOSH recommended zero exposure as a VC standard, the agency noted that while Maltoni found no liver tumors at 50 ppm, "There is the possibility that tumors might have been produced if a larger number of animals had been exposed at that concentration." Late last week the Manufacturing Chemists Association (MCA), the trade group for the chemical industry, announced preliminary results of tests of animal exposures to VC. The MCA found angiosarcomas in mice exposed to 50 ppm. The Labor Department promises it will promulgate a permanent standard at zero ppm by June. Even if a permanent standard is promulgated at zero exposure, it could be as ineffective as the standards regulating 14 occupational carcinogens set earlier this year—if, that is, its standards lack any monitoring provisions or allowance for medical surveillance of the

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workers.

In addition to the 6500 workers involved in VC or PVC production, there are also thousands of workers engaged in the fabrication of products with PVC resin. One of the Rubber Workers locals is conducting tests on levels in fabricating plants and has come up with extremely high readings; levels ranging between 200 and 1000 ppm. There is no evidence yet on the extent of danger vinyl chloride poses to millions of Americans who have come to use plastic products as a way of life—from phonograph records to auto seats, cosmetics and baby bottles and pacifiers. Dr. Selikoff believes consumers may be endangered as well as VC workers. Vinyl chloride has for years been used as a propellant in aerosol consumer products—paint, hairsprays, pesticides. Ralph Nader's Health Research Group has petitioned the Environmental Protection Agency, the Food and Drug Administration and the Consumer Product Safety Commission to ban the use of all vinyl chloride in aerosol products. To date, the petitions have been met with no action.

The Food and Drug Administration says it needs new authority to require manufacturers to list ingredients. FDA does not normally do any product testing. It has to depend on industry data and honesty. Honesty isn't always corporate policy: in response to the Health Research Group petition, the FDA stated that it informally polled cosmetic manufacturers to learn how much vinyl chloride was used in hairspray and the answer was none. The cosmetic company Clairol admitted that it manufactured "Miss Clairol" and "Summer Blonde" for four years with a propellant that was 25 percent vinyl chloride, but the company said it stopped the manufacture in mid-1973 and "reformulated" the products. (According to Clairol, after one minute of spray from these products, the air level in the breathing zone of the user could reach 200 ppm.) But in a letter to the Health Research Group in late March, Clairol said it did not "consider there to be grounds for recalling the small amount of product that is now in the field."

Then two weeks ago the FDA telegraphed Clairol asking for voluntary recall of these sprays from retail shelves, and Clairol readily agreed. All the cans of these products on store shelves contained vinyl chloride in the propellant because Clairol had not had a production run since last summer. While the company said it had reformulated the product since then and left the clear impression that only a small number of the cans left on retail shelves contained VC, the FDA was at first taken in. Furthermore, while Clairol originally maintained that only these two products still contained VC, the FDA announced that VC was also used in four additional Clairol products, all professional hair products.

The FDA also announced that another company producing aerosol hairspray, Bonat, was also voluntarily

withdrawing 13 products containing vinyl chloride from retail stores. That agency said that on information received from "industry" sources, an aerosol drug may contain vinyl chloride, but the FDA refused to release any information until the manufacturer "informs the FDA that this is so." It did turn out to be so and the FDA announced that Quick Aide medicated room vaporizer was being recalled. All of a sudden the FDA "discovered" 30 other aerosol products manufactured by Shield Chemical Company, including deodorants and first aid sprays that contain vinyl chloride. Now the FDA says all the products it regulates that contain vinyl chloride are being recalled.

The FDA has throughout assured the public that only a few products contain VC and at levels that are harmless. Dr. Joseph Wagoner, head of field studies for NIOSH, says that he doesn't buy the FDA statement that levels in hairspray at this time are free of any potential of inducing cancer. Wagoner will shortly announce a sizable research contract to investigate the possible carcinogenic effect on cosmetologists from products they have been using that contain vinyl chloride.

The action of the EPA, which regulates aerosol pesticides, has been even more dismal. Three weeks ago, the EPA finally responded to the Health Research Group petition, but in an unsatisfactory manner. Instead of recalling the 41 pesticides produced by 23 companies that contain vinyl chloride, the EPA merely asked the manufacturers' permission to release the brand names. Among the 41 products using vinyl chloride that are currently registered are sprays for restaurants, for dogs and cats, and for the household. (Five more were produced until recently, but the manufacturers voluntarily stopped using vinyl chloride.) Glenn E. Schweitzer, the director of the EPA's office of toxic substances and chairman of its study group on vinyl chloride, said that there currently is not sufficient evidence to warrant recalling these products. Yet Schweitzer said that one EPA study of vinyl chloride exposure resulting from the use of a household disinfectant spray indicated that if sprayed for 30 seconds in a typical bathroom, levels of vinyl chloride in the air would reach 400 ppm. Schweitzer insists that the usual exposure of humans to pesticides is too small to constitute an imminent health hazard.

On April 17 the EPA released a list of brand names of 20 aerosol pesticides that manufacturers or distributors had agreed to reveal. Despite this "sweeping regulatory action" the agency still refuses to force a recall. Manufacturers and distributors of 21 other products had various reasons for refusing to divulge brand names—including protection of "trade secrets." The EPA accepts such excuses because it says the agency currently finds no evidence of an imminent health hazard.

So consumers continue to use aerosol products containing this cancer-causing agent.

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