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PLAINTIFF'S EXHIBIT
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# Nader group joins union in asking ban on ten on-the-job carcinogens

Printed in big black letters, the graffito stands out defiantly on the wall of a workers' washroom in a Midwestern chemical plant. It is one man's formula for dealing with his hostile environment. "Practice shallow breathing and determine to outlive the sonsofbitches!"

Neither irony nor hypoventilation has yet been shown to provide protection against chemical carcinogens, however. What has been shown is that men working near coke ovens in steel plants are more likely to get lung or kidney cancer than is the general population. as are uranium miners and workers in nitrogen mustard factories, nickel refineries, and asbestos plants. Nearly 20 years ago, British investigators reported that people employed in handling certain dyestuffs are potential victims of bladder cancer. Other candidates for bladder lesions seem to be the clinical laboratory staffers who use benzidine to test for occult blood.

The Health Research Group, which is associated with consumer advocate Ralph Nader, declares that "as more is learned about the origins of cancer, it becomes clear that thousands of workers die as a result of exposure to carcinogens in the work environment." Early last month, that group joined the Oil, Chemical, and Atomic Workers International Union in petitioning the Labor Department's Occupational Safety and Health Administration for an immediate ban on the industrial use of ten chemicals, five of them linked to cancers in humans 4 aminodiphenyl, benzidine and its salts, bis-(chloromethyl) ether, beta-naphthylamine. and 4-nitrodiphenyl—and five that have produced cancers in animals—2-acetylaminofluorene, dichlorobenzidine and its salts, 4-dimethylaminoazobenzene, 4-nitrosodimethylamine, nnd beta-propiolactone.

Listed in the 54-page document are 50 major U.S. companies whose production processes involve the use of one or more of these substances, or who distribute or re-package one or more of them. The petition thus covers workers in the oil, steel. textiles. rubber, plastics, cork, and, of course, chemical industries, and others in allied fields.



*These men uvrking the ovens at a dye-making plant are among thousands who risk* cancer by *exposure to cited chemicals, according to petitioners.*

The petitioners ask the Labor Department to "issue an emergency temporary standard eliminating all workplace exposures to the carcinogenic aromatic amines, azo dyes. nitroso compounds, and alpha-halo ethers." They point out that the Occupational Safety and Health Act of 1970 provides for the issuance of such standards when a certain working condition is shown to pose a grave danger to employees. "The latent cancer liability of these chemicals and the danger of continued exposure necessitates the immediate regulatory action," declares the joint statement.

What say the affected companies to this challenge? Not much. Industry officials have been generally reluctant to comment on the petition. But Dr. C. Merle Bundy, medical director of U.S. Steel Corp., in Pittshurgn. docs say that no bladder damage has been observed in steelworkers possibly exposed to substances cited in the petition. On another matter not brought up in the union document, Dr. Bundy says his firm "is aware of the hazard to those exposed to coat-tar pitch volatiles around coke ovens," and is instituting stricter safety standards in those areas, along with medical monitoring the employees at risk.

In Buffalo. manager Ernst Bailey of Allied Chemical's specialty chemicals division. states that his plant "no longer uses benzidine or beta-naphthylamine" but instead uses benzidine sulfate. "a derivative that is less hazardous." (Dr. Sidney Wolfe, head of the Health Research Group, disagrees that it is.)

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Bailey says that since the opening of a new facility in 1958—a facility incorporating a "closed" system that [illegible] the chemicals in a shielded [illegible]—there have been no bladder lesions among previously unexposed workers." As for dichlorobenzidine, it may be an "experimental carcinogen," but Allied Chemical has used it for 30 years, with no evidence of bladder cancer arising." Company executives, says Bailey, are "completely convinced that it's safe."

At Aceto Chemical Co. in Flushing, [illegible], a chemical engineer says, "great care is taken in re-packaging beta-naphthylamine in a 'closed system,' with workers masked and wearing protective clothing." The company once tried to label that substance "poison," he recounts, but was told the term was being improperly applied. (There is no official "carcinogen" label.)

And Dr. R. M. Clyne, medical director at American Cyanamid, says that while the firm's pigments division does process benzidine yellow, it does so "under rigidly controlled conditions" and has seen "no evidence of [illegible] effects from exposure." Both Cyanimid and Allied note that they have long since stopped handling beta-naphthylamine.)

But will the safety precautions required by these chemical concerns reassure the labor and consumerist petitioners? Not likely, since they cite the findings of an ad hoc committee set up by former HEW Assistant Secretary Merlin K. DuVal to study the environmental exposure question. That panel, headed by Dr. Umberto Saffiotti of the National Cancer Institute, recommended that *no* level of exposure to a chemical carcinogen be considered toxicologically insignificant, and that any conclusive demonstration that a substance causes tumors in animals be considered a sign of potential hazard to humans.

Dr. Saffiotti is thus no believer in "closed" systems or protective clothing as answers to carcinogenic vapors. For him there are no safe levels of exposure, no acceptable tolerance thresholds. "It may take anywhere from ten to 20 years between initial exposure to most of these carcinogens and the appearance of a cancerous lesion," the NCI researcher told MWN. "Because of the long latency period, it's difficult to predict which of the workers exposed to the chemicals will develop a cancer. And we don't know how to establish, with any assurance, a 'safe' dose of a cancer-producing substance."

As for the difference between "experimental carcinogens" and those definitely linked to human cancers, Dr. Saffiotti says the concept of human resistance to carcinogens active in animals "has remained an expression of wishful thinking." All chemicals known to cause cancer in humans have been found to do so in animals. too. "with the possible exception of arsenicals, which are still under study."

Reguiatory efforts to protect workers from exposure to carcinogens have been made in Britain, Russia, India, and one state in this country, Pennsyivania. Dr. Saffiotti notes that the British measures prohibit employment of workers under age 45 in jobs where they might be exposed to any carcinogens.

The delayed effect of such exposure was demonstrated in a long-term epidemiological study made by Dr. W. F. Melick—a survey of men working in a plant that began producing aminodiphenyl in 1935. By 1970, 52 of them—or 16% of the exposed workers who had been esaniined cytoscopically—had developed bladder tumors. But this time-delay factor is not the only reason for setting the occupational tolerance level for carcinogens at zero, the petitioners suggest. According to them, epidemiological studies of aromatic-amine cancers indicate that once an effective exposure has been sustained, "no means exist for arresting a further course of an occupational cancer epidemic."

Of the five chemicals specifically implicated in human cancers, 4-aminodiphenyl was isolated from residues of aniline manufacture more than a century ago and has since been shown to be a very potent carcinogen even in cases of relatively brief exposure. Its target is primarily the bladder, and investigators have found that it is rapidly absorbed through unbroken skin and the respiratory tract.



*SIOSH Drs. Johnson (left) and Wagoner helped to tie hir- (chloromethyl) etker to cancer of the lung.*

Benzidine. an aromatic amine. has been associated with bladder lesions since the 1920s, the petition notes. An extensive statistical sun-ey of the British chemical industry in 1954 revealed that bladder cancer appeared on the death certificates of ten men exposed to benzidine alone in factories, whereas only 0.72 cases were to be espected in a comparable group from the general male population of Britain.

In a 1951 report, Dr. J. W. Meigs and his associates, having found an average of 1.5 mg/liter of benzidine in the urine of workers exposed to the chemical, concluded that these concentrations were too high to be esplained by inhalation alone. They were able to demonstrate a correlation between those concentrations and contamination of clothing with

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Bis-(chloromethyl) ether belongs to a group of substances that severely irritate the skin. eyes, and mucous membranes. But it was not linked to carcinogenicity in humans until last March, when field workers from the Sational Institute of Occupational



*Dr. Saffiotti maintains that there is no 'tolerable' level of exposure.*

Safety and Health (NIOSH) investigated the lung-cancer deaths of four employees of a California resin plant. Since then. Dr. Joseph Wagoner, director of field studies for SIOSH, and his colleagues have discovered significant amounts of abnormal cells in the sputum of workers esposed to the chemical. The presence of such cells, they believe. is an early indication of pulmonary disease, including cancer.

One of the most potent of bladder carcinogens is beta-naphthylamine, which can be absorbed through the respiratory tract. the GI tract, and the skin. In that British chemical industry survey reported 19 years ago, it was found that the probability of exposed workmen developing bladder lesions was 30 times greater than that of the general population. The British Manufacturing Chemists Association had reported earlier that removing workers from their exposed environment did not seem to prevent

there is no known safe, allowable exposure," said the chemists' group. "The only safe method of handling must be on the basis of no exposure whatever, in any form."

Production of hcta-naphthylamine was curtailed in Switzerland in 1938, in Britain in 1952, and in Pennsylvania in 1961.

The chemical 4-nitrodiphenyl (PNB) is structurally similar to that other carcinogen, 4-aminodiphenyl (PAB), and is an intermediate in its manufacture. In the 1950s, Dr. Melick and his associates studied workers at a U.S. plant that manufactured large quantities of PAB by reducing PS6 in a "closed" operation. Despite the precautions, the investigators found that 19 of the 171 employees developed bladder cancer.

How can these chemicals be regulated? In Pennsylvania, the use of beta-naphthylamine is prohibited unless a restrictive-use permit is obtained. Britain imposes a similar prohibition on that chemical. plus benzidine, 4-aminodiphenyl, and 4-nitrodyphenyl, again with allowance for a rigidly supervised restricted-use permit. The regulations in India and the Soviet Union are said to follow this pattern.

*Dr. Wolfe is incensed at what he sees as governmental foot-dragging.*



question is why.' So says Dr. [illegible] Johnson, acting deputy director [illegible] field studies and clinical investigations at SIOSH. He notes that a related safe substitute for beta-naphthylamine. Tobias acid, has been available for a long time and "costs only a few cents more than the chemical now in use."

Almost in answer to question is this comment in the petition: "The continued use of carcinogens demonstrates that voluntary discontinuance [by manufacturers] has not been effective."

Speaking at a recent meeting in New York. Dr. Saffiotti told his colleagues in cancer research that the principle of the Delaney clause of the Food, Drug, and Cosmetic Act—which prohibits the adding of any amount of cancer-causing chemicals to foods—may now have to be reconsidered in relation to exposure to occupational carcinogens."

"Up to the present time," says Wolfe of the Health Research Group, "the Department of Labor has ignored the necessity of regulation . . . This unresponsive attitude negates the findings made by Congress that beta-naphthylamine and other carcinogens do in fact present grave dangers to working men."

According to Gerard Scannell, director of the Labor Department's Office of Standards, his agency is engaged right now "in developing standards for cancer-causing substances." The department's timetable, he adds, calls for publication of these rules "sometime soon." Note that, of course, there will be the usual 30-day period during which the industry groups and companies affected by the orders can present their own comments. "These will then be evaluated," says Scannell, "and a set of regulations will be published in the *Federal Register.*"

Adherance to this time-honored process ignores the urgency of the problem, according to Nader-backed Wolfe: "Each workday that passes without regulatory intervention increases the number of employees who are effectively exposed to these chemicals and who may subsequently develop cancer." •