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1965 MEMOS SHOW DOW'S ANXIETY ON DIOXIN

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Almost 20 years ago, scientists from four rival chemical companies attended a closed meeting at the Dow Chemical Company's headquarters. The subject was the health hazards of dioxin, a toxic contaminant found in a widely used herbicide that the companies manufactured.

Shortly after the meeting, in Midland, Mich., on March 24, 1965, one of those attending wrote in a memorandum that Dow did not want its findings about dioxin made public because the situation might "explode" and generate a new wave of government regulation for the chemical industry.

Another scientist noted that at the meeting, Dow officials had disclosed a study showing that dioxin caused "severe" liver damage in rabbits.

Dioxin, which has also been linked to birth defects and skin disorders in laboratory animals, is believed to be the deadliest chemical made by man, but its effects on humans have been difficult to prove. Since the Midland meeting, various studies have yielded conflicting evidence on whether dioxin increases the risk of cancer in humans.

Although it has been known for many years that Dow held the 1965 meeting with its competitors, excerpts from corporate memorandums about the session are only now beginning to emerge as a result of a lawsuit filed in 1979 against Dow and several other chemical companies. The memorandums raise the possibility that Dow scientists have been saying one thing in private about dioxin while the company's management has said something else in public.

"There is absolutely no evidence of dioxin doing any damage to humans except for something called chloracne," Paul F. Oreffice, the president of Dow, said last month on NBC's "Today" show. "It's a rash." Dow has performed medical tests on individuals suffering from chloracne for "over 20 years," he added, "and there is no evidence of any damage other than this rash which went away soon after."

Dow's critics challenge the accuracy of Mr. Oreffice's flat assertion that there is no evidence that dioxin causes human damage other than chloracne and also charge that Dow has failed to publish all the information it has collected in its own dioxin research. Furthermore, they say, Dow has systematically resisted Federal and state efforts to learn about and regulate dioxin.

According to a pretrial motion filed by Yannacone & Associates, the legal organization created to represent the Vietnam veterans in the Agent Orange case, the 1965 meeting on dioxin was attended by eight of Dow's senior scientists and six officials of Hooker Chemical; the Diamond Alkali Company, which later became part of Diamond Shamrock, and the Hercules Powder Company. A representative of the Monsanto Chemical Company was invited but did not attend.

Donald R. Frayer, a spokesman for Dow, confirmed in an interview April 5 that the giant chemical company had called the meeting to discuss the health hazards of dioxin. "We feel the meeting was pretty darn straightforward and proper," he said. "I think on the balance that the record shows we discovered a problem, sought out our competitors and tried to give them information and a means to control the problem." Invitation to Meeting

The pretrial motion filed by Yannacone & Associates quoted a number of documents. V.K. Rowe, then director of Dow's Biochemical Research Laboratory, said in his invitation to the meeting that Dow had been researching "toxicological problems caused by the presence of certain highly toxic impurities in certain samples" of the herbicide 2,4,5-T and wished to share its findings. The Dow laboratory was and is recognized as one of the world's finest privately owned toxicology labs.

Two days after the meeting, C.L. Dunn, a chemist who was manager for regulatory affairs for Hercules, summarized in writing what he had been told.

"Dow says that their examination of their own and competitors' 2,4,5-T products contain what they call 'surprisingly high' amounts of the toxic impurities," he wrote.

"In addition to the skin effect," he wrote, describing the results of tests on rabbits, "liver damage is severe, and a noeffect level based on liver response has not yet been established. Even vigorous washing of the skin 15 minutes after application will not prevent damage and may possibly enhance the absorption of the material. There is some evidence it is systemic." Fear on Situation

Dr. John Frawley, the chief toxicologist for Hercules, who had also attended the March meeting, got a follow-up telephone call four months later from Earl Farnum, a Dow executive. Dr. Frawley immediately wrote a confidential memorandum to the file.

Mr. Farnum, he wrote, said he was calling on behalf of a Dow vice president, Donald Baldwin, and "stated that Dow was extremely frightened that this situation might explode."

"They are aware that their competitors are marketing 2,4,5-T which contains 'alarming amounts' of acnegen," Dr. Frawley continued, referring to dioxin, "and if the Government learns about this the whole industry will suffer. They are particularly fearful of a Congressional investigation and excessive restrictive legislation on the manufacture of pesticides which might result."

A second memorandum written by Dr. Frawley, and quoted in part by lawyers for the veterans, said he had just received new information about health effects of dioxin from Monsanto, which did not send a representative to the meeting. "From the data provided, a sample which contained 5 parts per million would be acutely toxic," he wrote. "Whether this refers to death or liver damage is not clear."

Daniel Bishop, a Monsanto spokesman, said in an interview that his company "didn't do any testing, period, not then and not now." He said that a fair reading of Dr. Frawley's full statement would make it clear that he had not received the toxicity information from Monsanto, but was not able to identify the information's source because the material in the Agent Orange case had been sealed by the judge. The documents were sealed at the chemical companies' request. Group of 75 Compounds

Dioxin is the name given to any of a family of 75 compounds, called dibenzo-para-dioxins, composed of benzene molecules and oxygen atoms. The compounds are an unwanted byproduct of several chemical processes, including the manufacture of 2,4,5-T under certain circumstances; 2-4,5-T is one of the two major components of Agent Orange.

Proving the specific effects of toxic chemicals on humans is extremely difficult; human experiments are generally prohibited by medical ethics. Animal tests, which are universally accepted by scientists as providing essential guidance on appropriate exposure levels for humans, are not a perfect guide because various species react differently.

In laboratory rats, concentrations as small as five parts per 1,000 million have caused statistically significant increases of cancer in rats.

Two studies, conducted on a group of forestry workers in northern Sweden and on a group of agriculture workers in southern Sweden, point to a possible association between exposure to herbicides contaminated with dioxin and an increased risk of soft-tissue cancers. Other studies, however, including one in New Zealand, show no higher risk of cancers for a group of farmers, foresters and fisherman exposed to dioxin than in men in other occupations.

Dr. Samuel S. Epstein, a physician who is professor of occupational and environmental medicine at the University of Illinois Medical Center in Chicago, cites the Swedish studies and other research on such questions as reproductive abnormalities to challenge the statement of Dow's president that there is no evidence that dioxin causes any more damage than a skin rash. "For Mr. Oreffice to make that statement is absurd," he said in a recent interview. Warning on Dioxin Studies

On March 23, Dr. Perry J. Gehrig, Dow's vice president for agricultural research and development and director of health and environmental science, cautioned the House Subcommittee on Natural Resources, Agriculture Research and Environment against "ove@rinterpreting" the Swedish studies. The reports, he argued, "are too incomplete, both individually and in aggregate, to currently formulate a clear picture of the possible associations between TCDD and soft-tissue sarcomas." TCDD is a form of dioxin.

In 1982, Dow scientists published a report of a company survey on the occurrence of spontaneous abortions, stillbirths, infant deaths and several categories of birth defects among the wives of Dow workers who had been directly exposed to dioxin. The study concluded there were few differences in the number and kind of birth abnormalities found in these women compared with the wives of Dow workers not exposed to dioxin, and the report has been used frequently to support the theory that dioxin is not as dangerous as generally believed.

But Dr. Marvin S. Legator, professor and director of environmental toxicology at the University in Texas in Galveston, questions the study.

"Initially," Dr. Legator went on, "Dow planned on comparing the birth defects among the wives of Dow dioxin workers with two controls. First, a group of wives of Dow workers in Midland who had not been directly exposed to dioxin, and second, some wives of workmen who lived outside the Midland area. This second control group was important because the Midland area is quite polluted and the general population has a relatively high level of congenital abnormalities. But when they published the study the second control group was not included." A 'Sampling Problem'

Mr. Frayer, the Dow spokesman, said the second group had been deleted because of "sampling problems." "The women could not be compared with those in the first two groups, and they were questioned in a different way," Mr. Frayer said. Information compiled by Dr. Alvin Young, an expert at the Veterans Administration, indicates that from 1961 to 69 American companies made a total of 154.5 million pounds of 2,4,5-T.

Of that total, 44 million pounds were applied to the jungles of Vietnam, 23.4 million pounds were exported to other countries and 78.1 million pounds were used domestically. The balance, 10 million pounds, was destroyed by the Government after it was decided to halt the Vietnam defoliation program.

Dr. Young estimates that 1,700 pounds of dioxin a year were produced in the United States from the mid-1950's to about 1975, when steps were taken to limit it through changing the manufacturing process.

There is broad agreement that a substantial portion of dioxincontaminated wastes are buried in thousands of dumps around the country. The Environmental Protection Agency recently said there were 12,000 of these dumps. Other experts have estimated the number may be closer to 50,000. Suits Against Companies

Billions of dollars are at stake in the answer to the question of what the chemical companies knew and when they knew it. In addition to the tens of thousands of veterans who have sued the chemical companies because of their exposure to Agent Orange in Vietnam, thousands of other Americans living near toxic dumps, such as the one in the Love Canal area of Niagara Falls, N.@Y., are seeking damages on the grounds that dioxin and chemical poisons left there have shortened their lives and caused cancer, birth defects and genetic damage.

In January 1979, a group of veterans brought a Federal suit in New York, charging that the dioxin contained in the 2,4,5-T sprayed in Vietnam was a cause of cancer and other diseases among their members and had resulted in genetic damage and the birth of severely deformed children.

Victor John Yannacone Jr., a principal organizer of the association of lawyers handling the class-action suit, said in a recent interview that the group now represents 20,000 Vietnam veterans, widows and children of veterans who are seeking damages against the chemical companies that provided the Government with Agent Orange.

The suit against Dow and the other major manufacturers of 2,4,5-T is scheduled to go to trial in the Uniondale, L.I., court of Federal District Judge George C. Pratt Jr. in June. E.P.A. Action Opposed

In an annual report filed with the Securities and Exchange Commission in Washington called a 10-K, Dow said it was one of six chemical companies who were defendants in the suit. "Dow believes it has not been scientifically demonstrated that the injuries claimed by the plaintiffs were caused or could have been caused by exposure to Agent Orange," the report said.

The Dow report also noted that the chemical company was opposing a move by the Environmental Protection Agency initiated during the Carter Administration that would totally ban the use of 2,4,5-T in the United States. The herbicide therefore is still being used on rice fields, on range lands and in industrial areas such as refineries, to control weeds.

The company's repeated public statements about the comparative safety of dioxin, including testimony to Congressional committees, press releases and scientific papers, have been accompanied by efforts on its part, particularly in the Reagan Administration, to block the Government from collecting information about the contaminant.

Evidence of the repeated contacts between Dow and E.P.A. officials in Washington, if not of the subject of the meetings, is contained in the calendars and travel records of these officials that have been obtained by the House subcommittees investigating the agency. Links to Government

Anne McGill Burford, for example, made at least two trips to Midland, Mich., in her 22 months as the head of the Environmental Protection Agency. Rita M. Lavelle, the former head of the Government program to clean up toxic waste dumps, met at least 14 times with Dow officials in the 11 months she held office.

Mrs. Burford, Miss Lavelle and 11 other political appointees recently resigned or were dismissed amid Congressional inquiries on allegations that the agency's toxic waste program had been mishandled.

According to the public testimony of some officials of the agency, Dow used its connections with the top echelon of the agency's Washington officials to get its way on several important matters relating to the regulation of dioxin.

Three weeks ago, for example, agency officials in Chicago told the Investigations Subcommittee of the House Committee on Energy and Commerce that their superiors in Washington ordered them to change an important report on dioxin to comply with the wishes of Dow.

The key deletion from the report was the following central conclusion about Dow's Midland plant: "Dow's discharge represented the major source, if not the only source, of TCDD contamination found in the Tittabawassse and Saginaw Rivers and Saginaw Bay in Michigan."