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Interoffice Communication

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To Plant Managers

From D. A. Kuhn

Date March 7, 1979

Subject POSSIBLE LINK BETWEEN VCM AND BRAIN TUMORS

Enclosed is a copy of an article which will appear in the March edition of ChemNews scheduled to be in employee mailboxes about March 21. There is also a copy of an article from the February 28th issue of Chemical Week. These cover the discovery of a high incidence of brain tumors among employees at Union Carbide's Texas City plant. Publicity surrounding the announcement cited a possible link between VCM exposure and this particular type of brain tumor. Very recently there was news of five additional brain cancer deaths at Monsanto's nearby chemical plant. The information is so preliminary that they are not sure of the type of brain tumor so no conclusions can be drawn.

We're running the article in ChemNews because our employees need to be informed about the situation from Conoco Chemicals point of view, but we also wanted you to have some more background information so that you can answer questions that may arise.

First, I don't believe that any Conoco Chemicals employees should be alarmed. No one has yet inferred that the present 1 ppm standard is not stringent enough to adequately protect employees. As the story points out the link between tumors at Union Carbide and VCM is hypothetical. Some mention of a link between brain tumors and VCM has been found upon searching the scientific literature. These studies also show an increased possibility of lung and liver cancers. As the Chemical Week article points out there were nine deceased and one living employee with glioblastoma multiforme a tumor of the brain cells. There was one deceased employee with meningioma, a tumor of the brain covering. Both were malignant.

We have done a quick scan of the medical records of employees exposed to VCM and found several instances of brain tumors. No of them are glioblastoma multiforme or meningioma, the types of tumors discovered at Union Carbide. Here are the details:

-Ed Wilkins at the VCM plant died of ependymoma, a malignant tumor of the brain covering, but different from meningioma

-Jimmy Hawkins at Aberdeen died of metastatic melanoma of the brain, a cancer that originated in another part of the

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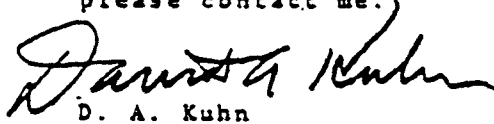
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body but metastasized throughout his system generating the brain tumor.

-Dick Darling at Baltimore had a brain cell tumor but it was benign.

Union Carbide is now committed to completing a high quality study with or without NIOSH to determine the cause of the tumors. Conoco Chemicals will also do a thorough study of the records of our present and past employees, to make sure that the results of our scan are correct. We'll be following Union Carbide's study which is expected to take about a year and inform you and employees about our and their results. If I can answer further questions please contact me.



D. A. Kuhn

DAK:sc

cc: R. E. Lehmkuhl - Houston
C. L. Whetstone, M.D. - Ponca City

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top of the news

OSHA, NIOSH study brain-tumor deaths at Union Carbide facility

Following the discovery that 10 employees at Union Carbide's Texas City, Tex. plant had died of brain tumors, the Occupational Safety and Health Administration and the National Institute of Occupational Safety and Health are conducting an epidemiological study of 8,000-10,000 present and former workers at the plant. The investigation resulted from a worker's complaint last November, alleging an abnormal incidence of brain tumors among personnel in the company's chemical-shipping area.

OSHA inspectors visited the plant on Dec. 13, 1978, and Jan. 8, 1979, and reported last week that examination of Carbide's medical records revealed 11 brain-tumor cases, including 10 deaths. Nine of the workers had died of a form of cancer called glioblastoma multiforme; the living worker is believed to have glioblastoma. The other employee died from meningioma, another type of brain tumor.

According to OSHA Administrator Eula Bingham, "The total number of brain tumors so far would appear to be higher than expected for a plant population this size." At the start of the investigation, which is expected to take about a year, vinyl chloride monomer is the leading suspect. While VCM is most commonly associated with angiosarcoma, a form of liver cancer, several studies have linked it to glioblastoma. Sanford Leffingwell, a NIOSH medical officer who is heading the epidemiological study, cites a 1976 study by Richard Waxweiler published by the New York Academy of Sciences, and a later study by Italian researcher Cesare Maltoni that showed an incidence of another type of brain tumor in rats exposed to VCM. A study supported by the MCA also recognized an incidence of glioblastoma among the workers exposed to VCM in its sample.

Carbide says that the affected workers were exposed to VCM in 1950-1965, but evidence at this point is far from conclusive. Leffingwell says that other chemicals in use at the plant, including ethylene oxide and acrylonitrile, are possible causes of brain tumors and will be examined. It is also possible, he points out, that the number of glioblastomas could turn out not to be excessive for a plant with approximately 2,000 employees. In the period since 1941, there have been 455 known deaths of Carbide employees at Texas City, although all 10 in which brain tumors were listed as the cause occurred

in the years between 1962 and 1978.

Shock Waves: Even the tentative link to VCM has sent tremors through the vinyl industry. On February 13, Union Carbide plant manager Damon L. Engle sent a letter to employees at Texas City apprising them of the brain-cancer cases. A similar letter was given to employees at Carbide's S. Charleston, W.Va., facility, and other VCM manufacturers were informed of the findings at Carbide. A Dow Chemical statement cautions against hasty correlation of the deaths with VCM. Dow says that mortality studies conducted recently at Freeport, Tex., and last year at its Plaquemine, La., VCM facilities failed "to show any indication of a similar situation. Both studies showed no deaths from brain tumors among VCM workers."

The joint OSHA-NIOSH investigation team is gathering data. As a result of findings to date, OSHA is also investigating a "compliance complaint" at Monsanto's operations in Texas City and says that it is possible that other plants will also be checked, though none has been identified.

Davis Layne, area director of OSHA's Houston office says "We are just beginning to turn the leaves, and it all depends on what turns up."

Stauffer's board OK's 2-for-1 stock split

Stauffer Chemical's board last week approved a two-for-one stock-split proposal that they will present to shareholders on April 18 for final approval. The move is the latest in a string of stock-split proposals by such chemical companies as Du Pont, Mobil Corp., SmithKline, and Carlsle Corp. (CW, Feb. 14, p. 10).

H. Barclay Morley, Stauffer's chairman, said the proposed split would help bring the stock price, which was around \$40/share last week, down to a level that would be more attractive and affordable to investors.

The proposal calls for boosting Stauffer's authorization for shares to 70 million from the present 30 million. Right now there are about 21.9 million shares outstanding, and the largest shareholder among the board of directors, Christian de Dampierre, owns fewer than 2%.

The board also said that, if the shareholders approve the proposal, the board will consider boosting the second-quarter dividend by 10%, to 27.5¢/share after the split. The move would be in line with the company's policy of raising dividends to offset the effects of inflation. Stauffer has split its stock two for one twice in the past—in April 1957 and in May, 1976. □

Syntex nears naproxen lawsuit settlements

Pharmaceutical producer Syntex Corp. agreed last week to settle out of court all pending lawsuits with Syntex shareholders and Industrial Bio-Test Laboratories (IBT) connected with IBT's alleged deficiencies in testing Syntex's anti-arthritis drug, naproxen.

The agreement requires the companies to set up a \$2.75-million settlement fund, of which \$1.8 million would come from IBT, \$574,000 from Syntex, and \$375,000 from Syntex's insurance company. In exchange, the lawsuits would be dropped. The arrangement is still subject to court approval.

The settlement fund benefits class-action lawsuit plaintiffs, whose suits, filed in 1976 and later consolidated in federal court in New York, alleged that IBT was deficient in performing and reporting on a rat study of Syntex's Naproxyn naproxen. The suits also charged that Syntex knew or should have known about the alleged deficiencies, and that the prices of Syntex's securities were artificially inflated because of allegedly fraudulent representations and omissions stemming from the company's statements about naproxen. In addition, on Oct. 15, 1976, the Food and Drug Administration proposed withdrawing its approval of naproxen's new drug application on the grounds of the alleged deficiencies in the rat study by IBT for Syntex.

Syntex says it is agreeing on the settlement to avoid the expenses of a lengthy trial, which would require our scientists and executives to waste months in courtrooms thousands of miles away. "But the company admits no wrongdoing in the case, and, in earlier answers to the suits, denied all allegations of improper conduct. As of July 31, 1978, Syntex's worldwide sales of naproxen totaled \$87 million for the fiscal year. The non-hormonal anti-inflammatory drug, marketed in about 40 countries, is a major product in Syntex human pharmaceuticals business.

Nalco Chemical, IBT's parent company, notes that, as part of the settlement, Syntex agreed to dismiss a suit the drug maker filed against IBT in Chicago, on the settlement of the suits in New York approved. And IBT's \$1.8-million payment under the settlement terms, Nalco says, will be charged against the rest for discontinued operations set up at Nalco in 1978.

Syntex, meanwhile, says it has repeated the study of naproxen in question. It submitted it to FDA in late 1978, but has had no response from FDA.

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Brain tumors found at Union Carbide

An unusually high number of workers at Union Carbide's Texas City plant have died of a type of brain tumor that some federal health agencies believe may be linked to vinyl chloride.

The medical certificates of nine Texas City workers who died between 1962 and 1978 list a cancerous tumor known as glioblastoma. As the cause of death in each case, a brain employee who living has been diagnosed previously having the same type of tumor.

The similar causes of death were turned up in a joint study being conducted by OSHA, NIOSH and Union Carbide as a result of a worker complaint late last year. So far, over 450 death certificates have been examined, and health records of more than 8,000 to 10,000 present and former employees, going back to 1941, are being reconstructed. Separately, Union Carbide has announced plans to study health records of over 50,000 present and former employees across the nation.

No positive VCM link

The total number of brain tumors found so far "would appear to be higher than expected" at a plant like that at Texas City, which currently employs about 2,000 workers, and represents an "unusually high incidence" of such deaths, said Eula Linnham, assistant secretary of labor for OSHA. "It's too early and there are too many chemicals in use at the plant to reach any definitive correlations," she continued.

Sources at Union Carbide have told Conoco Chemicals Company that they also are not ready to assume vinyl chloride is responsible for the tumors because many other chemicals are made or handled in the plant, and some of the affected employees did not have work history associated with VCM exposure.

"We're going to be following the studies at Union Carbide very closely and we'll keep employees fully informed as results develop," said Dave Kuhn, director of biomedical and environmental health for Conoco Chemicals.

Union Carbide is to encourage its workers to undergo regular health checkups, Kuhn said. "We're going to provide the best possible medical assistance for our workers," he said.

"I don't think there's any reason to panic in our employees to be sure."

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James J. Hall

CONOCO

To Jim DeBenedictis
Bill Henry
Curry Miller
Al Sotter
John Truitt
Keith Fogg

Date 2/16/79

I'll try to get some more info
on this NIOSH "study" at Carbide
& let you know -

JH

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