How BFG Physician Found

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Dread Occupational Disease

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New York Times Service

NEW YORK — A physician for the B. F. Goodrich Chemical plant in Louisville, Ky., Dr. John L. Creech Jr. examines all employes returning to work after an illness.

He was struck recently by the larger number of liver ailments among the workers, compared with patients he saw in his private surgical practice.

CREECH searched his memory and worker records and discovered that in the last five years, four employes had died of angiosarcoma of the liver, an extremely rare cancer. All the affected workers, he found, were directly involved in the production of polyvinyl chloride from vinyl chloride, a gaseous organic chemical known to damage the liver at high concentrations.

Now, there is a report of a fifth death from the disease.

The doctor suspected a relationship between this chemical and the illnesses he was seeing in the workers. His suspicions have led the government to declare an "occupational-health" emergency and to seek ways to protect workers. They have also spurred extensive studies by

'Thousands of workers examined'

Federal, industry and other scientists to define the cause of the problem and how extensive it may be.

Vinyl chloride, an ordoriferous simple molecule of carbon, hydrogen and chlorine, is the foundation for much of the modern plastics industry. Large number of vinyl chloride molecules can be joined to from a polymer, a chemical chain resembling a beaded necklace.

Some 6,500 workers in 51 American plants and many more thousands of European workers are involved in the production of vinyl chloride or polyvinyl chloride, a white powdery chemical resembling sugar.

Thus, when Goodrich officials conveyed Creech's observations to the National Institute for Occupational Safety and Health (NIOSH) three weeks ago, the situation was regarded as "a serious emergency to be immediately and fully investigated," Dr. Marcus M. Key, director of the Institute, told a meeting of labor and management in Cleveland last week.

Accordingly, the Institute, as well as Goodrich and the Manufacturing Chemists Association, has launched intensive studies of thousands of workers — past and present, dead and alive — and a variety of laboratory animals to determine the nature, extent and cause of illness among vinyl chloride workers.

Although these studies will take many months, and in some cases years, to complete, at a hearing in Washington, NIOSH recommended emergency corrective action to the Occupational Safety and Health Administration, which is considering new reg-

'European industry has studies also'

ulations to protect workers exposed to vinyl chloride.

THE CURRENT Federal standard allows workers to breathe as much as 500 parts of vinyl chloride per million parts of air, a level that readily causes liver damage in animals, according to a study published 13 years ago by a Dow Chemical Company scientist. Although the government did not act upon this finding, several companies, including Goodrich, lowered their plant standard to 50 parts per million, one-tenth the permitted level.

However, one study showed that at certain points of the polyvinyl chloride operation, workers may be temporarily exposed to vinyl chloride levels of up to 1,500 parts per million. In Europe, where 75 pct. of the world's supply of vinyl chloride is produced, signs of liver disease have been found in a large percentage of exposed workers, according to foreign language reports dating back to the early 1960s.

But it took a report in 1970 of an Italian laboratory experiment to shake up the vinyl chloride industry. Rats exposed to very high levels of the chemical developed cancers of the skin and lungs.

This prompted the European industry to launch its own studies, one of which has reportedly resulted in angiosarcoma of the liver in rats exposed to low levels of vinyl chloride — lower than the U. S. standard of 500 parts per million.

Prof. Cesare Maltoni of the University of Bologne, who did the experiment, was to describe his results to a hearing in Washington.

"With this finding, we have come full cycle, Dr. Irving J. Selikoff remarked at the Cleveland meeting. "We have cancer in the vinyl chloride workers and apparently the identical tumor has been reproduced in animals exposed to the chemicals," said Selikoff, who is director of environmental medicine at Mount Sinai School of Medicine here.

NONETHELESS, Selikoff and the Institute scientists said they are keeping an open mind about the cause of the problem. Some 50 or 60 different chemicals besides vinyl chloride are used in these plants, and any one of them could turn out to be the culprit, they said.

It is also possible that something pecular to the Louisville workers — either now or in the past — accounts for their susceptibility to this rare tumor.

However, Creech, for one, does not think so, "I think when we look we'll find angiosarcoma of the liver all over the world, wherever vinyl chloride is used," he said.