FIBERGLAS INTER-COMPANY CORRESPONDENCE

To: H. Hardwick - Berlin

Date: February 16, 1967

From: W. C. Taylor

cc: F. H. Edwards
R. E. Grimmie - Berlin
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Subject: CARCINOGENICITY OF ASBESTOS AS CONTAINED IN KAYLO

Since there appears to be a state of near panic on the part of some relative to the likelihood that cancer will result from prolonged exposure to the asbestos fraction of Kaylo dust, I am putting down the opinions I have in this regard as a result of having read the available articles and abstracts on the subject to date.

First, J. S. Harrington of the Royal Cancer Hospital in London, strongly suspects that carcinogenesis is due to the presence of carcinogenic polycyclic hydrocarbons or other organic materials in the natural or contaminating oils of asbestos. Such oils have been found by extraction to range from 0.05 to 1% for crocidolite and amosite asbestos, the former usually containing a greater amount. There may be considerable variation from one type of asbestos to the other and within any one sample.

There are two major amosite asbestos mining areas in South Africa; one in the North West Cape, the other in the Northern Transvaal. These areas are 300 miles apart. G. K. Sluis - Cremer of the Miner's Medical Bureau, Department of Mines, Johannesburg, South Africa reports a most remarkable phenomenon. The high prevalence of pleural mesothelioma in the North West Cape does not occur in the Northern Transvaal. Medical facilities are of equal standard in the two areas. The prevalence of asbestos fibers in the sputum was remarkably similar for all groups in both areas.

The author of this paper states that none of the factors examined explains satisfactorily the absence of mesotheliomas of the pleura in the Transvaal. The question in my mind is, does the amosite from one area contain a carcinogenic oil whereas the one from the other does not, or contains very little? This question does not appear in the particular paper.

J. C. Wagner of the M.R.C. Pneumoconiosis Research Unit in Glamorgan, Wales, reports that in South Africa more than 100 cases of pulmonary malignancy have been confirmed histologically. Nearly all of these cases have been confined to one asbestos mining area. Chemical investigations have shown that oils containing carcinogenic hydrocarbons are present naturally in this particular type of asbestos.

At present, W. E. Smith and Llonas Miller are conducting extensive studies at Fairleigh Dickinson University at Madison, New Jersey, on carcinogenic

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oils that may be associated with asbestos. Apparently the theory is gaining wide acceptance that the causative of cancer is the organic contaminant rather than the mineral itself.

The point of this part of the discussion is, of course, does any, or could any, of the organic carcinogenic oils remain in the asbestos fraction of Kaylo after having been subjected to the severe conditions of the autoclave? Would there be chemical alteration in the presence of lime? Would there be thermal decomposition? Would they be driven off by steam distillation?

In view of the nature of the studies being carried out at Fairleigh Dickinson University, I should think that the investigators there would welcome the opportunity to study the effects of asbestos that had been taken from Kaylo itself.

The second point of this discussion deals with the turmoil caused by Dr. Selikoff's paper that appeared in the April 6, 1964 issue of the J.A.M.A. reporting the high incidence of cancer among members of unions in New York and Newark, New Jersey, engaged in insulation work.

Dr. Selikoff limited his study to men with a history of exposure of 20 years or longer to insulation dust. Selected were 632 men on the union rolls as of January 1, 1943. Of these 632 men, 339 had been exposed to asbestos dust prior to 1924. The remaining 293 men reached the 20 years-since-first-exposure point at some time after January 1, 1943 and before the end of 1962.

It is these dates that are significant in that they show that calcium silicate insulations could not have been involved to any appreciable extent in these cases of 20 years and longer exposure. Kaylo was the first of this type and it would have been late in the 1940's before any significant amount was on the market.

Among the group of the 632 workers under study, 18 died of cancer of the lung and pleura during the 1958-1962 period. Even within this latest time bracket reported, none could have worked exclusively with calcium silicate insulation for the specified period of 20 or more years.

Thus Kaylo insulation is indicted only by inference and association, and not by direct evidence. The only common denominator is that asbestos is a component of thermal insulation in general. The possibility that the carcinogenic property or contaminant of asbestos may be eliminated during calcium silicate processing should not be ignored or dismissed from consideration.

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