November 27, 1944

Dr. U. E. Bowes
Owens-Illinois Glass Company
Toledo, Ohio

Dear Dr. Bowes:

It was a pleasure to have had opportunity to discuss the K-Lo problem with you and Mr. Firth in Pittsburgh the other day and am keenly interested in your proposals for further investigation of any hazards which might be associated with exposure to dust of this material.

To summarize our discussion I may state that in my opinion such an investigation should include (1) an inspection of manufacturing processes at the new plant in Berlin, New Jersey, (2) a study of the behavior of K-Lo dust in atmospheric suspension including such features as the effect of humidity, tendency to flocculate and settle, the relative proportions of fibres and particles in air floated dust, etc., and (3) daily exposure of a large number of experimental animals to high concentrations of dust of this material to determine first, whether it can be inhaled into the lungs in significant quantities and second, whether it will produce serious pathological reaction.

On investigation of our situation here I believe we will be in a position to start such a study about January 1, 1945. By that time we hope to have the necessary number of guinea pigs and white rats available. For the moment our supply is very limited.

Our engineer will plan to visit Berlin, New Jersey as soon as his schedule will permit and I also shall expect to do so when I am in the vicinity which should not be too far distant. We will want to collect several hundred pounds of dust in order to insure material of uniform composition for the entire experiment. Probably as you suggest dust from the collector system in your factory would be satisfactory for the purpose unless it should be grossly contaminated with other dust. The exact amount that we shall need would have to be determined after we experiment with it to discover how readily it will produce a dust cloud in our experimental room. I would suggest that you send us about ten pounds of collector dust for preliminary investigation.

We should contemplate exposing at least 150 guinea pigs, 50 white rats and perhaps 10 rabbits 8 hours daily 6 days a week over a period of one or two years. The nature of the results would determine the duration of the experiment. If the one year results are negative or minimal it will be necessary to continue the exposure for at least

another year in order to make certain that this material does not slowly penetrate and accumulate within the lungs to cause chronic tissue reactions. As in previous experiments this test will involve sacrifice of groups of exposed animals at intervals during the exposure; gross microscopic and chemical analyses of their tissues.

In view of the fact that there may be some uncombined silica in the mixture I believe that 50 of the guinea pigs with a like number of undusted controls should be infected with tubercle bacilli to discover whether there is any alteration of susceptibility to such infection.

The cost of this experiment will be $8,000.00 a year plus the necessary travel expenses of our engineer for plant inspection. Should you desire to undertake it I would suggest that payment be made quarterly to the Saranac Laboratory. You would, of course, supply the necessary dust for investigation. The Laboratory will keep you informed of the progress of the work and on its completion furnish a complete report of all details of the study. It is hoped that the results may be such that you might wish to have us publish our findings but it is understood that nothing will be published without your authorization.

Very truly yours,

Leroy U. Gardner, M. D.
Director

LUG:RH

cc to Mr. A. C. Firth

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