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William M. Singer Memorial
Research Laboratory
E. North Ave.

E. S. Pittsburgh, Pa.

February 15, 1937

Dr. T. Lyle Hazlett,
Westinghouse Electric & Manufacturing Co.,
East Pittsburgh, Pa.

Dear Doctor Hazlett:

I sent Dr. Gardner some of our experimental smoke work, some questionable silicotic lung sections, and the sections from your dust injections. That part of the letter which has to do with your tests is as follows:

"As to the Sayers-Miller intraperitoneal test, I think the value of this reaction lies in the gross appearances of the animals lesions rather than in the microscopic findings. Almost any dust injected in massive quantities, such as are employed for this test will produce a mechanical necrosis about the foci where particles are concentrated. In time this necrosis disappears with the inert substances but becomes replaced by more reactive reactions with siliceous particles.

From comparing the reactions to the silica and the dust particles collected from the annealing rooms of Dr. Hazlett's plants I would not be able to differentiate them in microscopic sections, at least in one or two months time. The size and extentof the gross reaction would be a much more reliable index, it seems to me.

If Dr. Hazlett really wants his enamel tested, I believe that a much better procedure would be to inject a gram of the particles intravenously into rabbits. You need use only four animals for the purpose, or less if you want to take a chance. The particles should be ground so that none is greater than 5 microns in diameter. A 1% suspension is prepared in salt solution and sterilized. Twenty injections of 5 cc. each are given at bi-weekly intervals. One animal is killed immediately after the injections are completed, and the others at intervals of 6, 12 and 24 months. By this method the particles reach the liver, spleen and bone marrow by physiological mechanism. The tissues are not overwhelmed and you do not get false positives mechanically. Clean cut differentiations between the reactions to silica and non-irritating substances are then possible. I have given my results on intraperitoneal

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injections although I am still comparing them with the picture produced by the intravenous rabbit test."

Dr. Schnurer has prepared a complete report and I have made several photographic prints showing the comparative nodules. As this completes the guinea pig work, I am enclosing a bill.

We used 14 animals altogether but some of them were in replacement of animals which died. It seems to me that the nodules were similar in size, structure and appearance for each of the three dusts submitted by you.

I think you may prefer to send dust directly to Dr. Gardner in case you wish the test that he suggests performed.

Very truly yours,

Samuel R. Haythorn

Samuel R. Haythorn, M.D.

IN RE: ABRAMS
SEPTEMBER 1992