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INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

MELLON INSTITUTE, 4400 FIFTH AVENUE

Official

P 36

PITTSBURGH 13, PA.

June 17, 1954

Mr. O. H. Cilley, General Manager
Raybestos- Manhattan, Inc.
United States Asbestos Division
Manheim, Pennsylvania

Dear Mr. Cilley

This letter will constitute a memorandum of the conference we held at your offices on Thursday, June 10. In addition to summarizing the subject matter of our discussion, it includes, as you will note, a number of afterthoughts.

At the outset we expressed the opinion that, with one or two exceptions, a primary problem in an intelligent attack directed toward further reduction of dustiness in the various departments of your plant is in establishing beyond any doubt the exact sources of dust remaining at each machine and operation. Dust control measures that have been instituted during the past fifteen years or more have succeeded in eliminating most of the obvious sources of dust and measures that need to be taken to reduce the dust still further requires certain knowledge of the particular elements of each machine that continue to contribute to air-borne dust.

In order to meet this need we proposed a tool and a procedure which consists in providing a complete enclosure for the machine being studied or of some representative portion of it, supplying the enclosure with a stream of filtered air and measuring the dustiness in the air leaving the enclosure. The product of the dust concentration and the rate of air flow will permit a description of the dustiness of the enclosed machine elements in the units--particles of dust per minute. Various

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experimental modifications can then be applied to the enclosed machine and the effect in reduction of dustiness measured quantitatively. By this technique all guess work will be eliminated as to the effect on dustiness of any particular adjunct applied to the machine.

It was brought out in this conference that primary attention should doubtless be accorded to the twisters and if the experimental scheme previously outlined were to be applied to a study of this machine, a few spindles at one end would be enclosed and various schemes of whatever apparent merit would be applied to each of the enclosed spindles and the effects measured quantitatively. The question of replacement of the twister by speeders, a matter which has evidently been discussed throughout the years, was again considered during this conference, but we did not have the benefit of dust count information during most of this discussion which Mr. Luttenberger obtained from his files at the end of the day. Measurements made some time ago by the State Division of Industrial Hygiene appeared to establish beyond little doubt that the speeder produced very much less dust than the twister, whereas, prior to an examination of this data we had felt that there was no objective basis at all on which a sound decision could be reached for the replacement of twisters by speeders.

In the light of this we should state as our first objective in the testing program, a quantitative determination of the extent to which dust will be reduced by substitution of speeders for twisters. This assumes that no ideas will be forthcoming for further reduction of dust from speeders.

On a visit to the Preparation Department gross production of dust was noticed at the blending process. It appeared from our discussion that the major proportion of this dust could be readily eliminated by the construction of an enclosure above the batching bed with an exhaust at a rate of six to seven thousand cubic feet per minute. This idea had the advantage that no design problems intervene; that is, this corrective measure could be instituted without delay and would, furthermore, not interfere with incompletely formed plans described by Mr. Luttenberger for some mechanical feeding.

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In our discussion of dust counting it was agreed that for the purposes of equipment study it would be feasible to train one of the men now on the laboratory staff in the use of the impinger sampling equipment and in the use of the microscope for counting the dust content of that sample. It was suggested that this man be sent to the laboratories of the State Department of Health for a few days training to be followed, perhaps, by a day or two at our laboratories here. It is possible that the latter might be omitted without any loss.

It is not the thought, however, that this amount of training would be sufficient for this individual to conduct dust count studies in the various departments of the plant. It is possible that at some later date it may be deemed advisable to provide him with some supplementary training enabling him to be used in such a capacity. In this connection we discussed the status of existing American dust counting techniques and expressed the opinion that with dust concentrations reduced, for the most part, to levels of two and three million, the results of such dust count measurements now have but limited value because of the lack of criteria for their interpretation. On the basis of the information obtained by you in England concerning the levels of dustiness prevalent in the plant of Turner Brothers we could see the value in a dust count survey made for the purpose of comparing conditions in your plant with those in the English plant. This would necessitate adoption of the English procedures in toto, at least for the duration of that particular study. In consideration of this idea you had planned to write immediately to your industrial friends in England for detailed information on the sampling and dust counting procedure.

Confirming my conversation with you, our charges for field work and consultation are based on a rate of $150 per diem and expenses except that the rate is $100 per diem for the younger members of the staff who perform dust counting where required.

I shall now await word from you as to when you will be ready for me to make a return visit.

Sincerely yours,

W. C. L. Hemeon
Engineering Director

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