



INT. RE: ABRAMS

DECEMBER 1992

Headquarters Medical Department
From

Date January 11, 1946

Subject

SOUTH PHILADELPHIA WORKS
Mr. Wm. F. Stegemerten
Assistant Works Manager

CC: SOUTH PHILADELPHIA WORKS, Mr. W. R. Ross, Safety Super.

The use of asbestos in the manufacture of lagging for heat insulation on steam turbines as carried out in Department W-12, presents a potential health hazard due to the possibility that workers may breathe asbestos dust. In recent months this hazard has been reduced considerably because of the fact that fiber glass has been substituted for asbestos for filling the blankets. The fiber glass, however, presents a different type of hazard due to the fact that dust from this material produces a severe itching of the skin of most people.

During recent periodic physical examinations of employees in this department, it has been observed that there are several cases which show lung conditions which might possibly be associated with exposure to dust in this department. These lung conditions may or may not be related to the work. However, a claim for compensation from any of these people would be very difficult to defend because of the fact that the protection provided in this department at the present time can hardly be called suitable or adequate.

Any condition which may exist in these workers at the present time is a result of exposure over a period of many years and, of course, any changes which are made now would not eliminate the possibility of compensation claims from this group of employees. However, if it is possible to provide effective protection in the future, it would be reasonable to assume that we could effectively defend any claims which might result from exposures after the corrective installation has been made.

The present exhaust system over the table where they fill and sew the blankets does not satisfactorily remove the dust from this operation, and since no air supply system has been provided, the high

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velocity air which enters the room every time the door is opened, stir up all the dust on the floor and tables and this results in an unnecessary dust exposure. In accordance with our discussion last Tuesday, I have made a penciled sketch which shows a proposed method of ventilation for the table where they fill and sew the blankets. I would suggest that the air velocity at the face of the exhaust hood over the table be calculated on the basis of 125 to 150 feet per minute. It would also seem desirable to limit the velocity of the air entering the room to not over 750 feet per minute. The air supplied to the room should be approximately the same as the amount exhausted. This sketch presents merely the principles to be followed in the design of this installation, and if you like I would be glad to review your detailed plans after they have been completed by your Works Engineering Department.

I feel that the installation of such a ventilating system as indicated on this sketch would effectively reduce any possible health hazard from breathing asbestos dust during the filling and sewing of the blankets, and would also reduce very considerably the skin irritation which occurs from handling the fiber glass materials. The clean-room should be designed with smooth walls and a smooth floor, and a vacuum cleaner provided for cleaning the floor and table so that unnecessary dust would not be raised due to sweeping or similar cleaning operations.

There is one other operation which should receive some further attention, in the one room where they mix an asbestos compound with water and apply this wet mixture to the turbines. We would recommend that an exhaust hood be furnished over the box where they mix the asbestos compound with water. This hood could be designed with an average face velocity of about 150 to 200 feet per minute so that dust created during the emptying of the dry material from the cloth sacks would be effectively carried away and would not be breathed by the workers. This operation involves the greatest potential hazard at the present time due to the dust which is created several times each day. Ventilation for this operation could probably be provided and connected to the same system that will be used in the adjoining room.

If I can be of any further help in connection with the problem of providing adequate protection for the employees doing this kind of work, I will be glad to have you get in touch with me at any time in the future.

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E. C. Barnes
Industrial Hygiene Engineer