

December 30, 1942

Dr. T.J. Bulger,
Chickasaw Ordnance Works,
E. I. du Pont de Nemours and Company,
Memphis, Tennessee.

Dear Dr. Bulger:

The severity of the exposure associated with "Lead Burning," is quite variable dependent upon the circumstances. The chief factors have to do with the number of men employed per unit of space at work of this kind, the surface of molten metal which is exposed to the atmosphere, and the general conditions with reference to the speed and manner of cooling the burned surface. For example, if a considerable number of men in line are burning a sizable surface and then blowing their jet of air over the heated metal to cool it quickly, a considerable amount of fume and lead oxide may be distributed into the air both at the point of heating and at some distant point in the plant. It is not possible, therefore, to say what the hazards are without knowing the details of the operation. Generally speaking, it is advisable to ventilate operations that are associated with lead burning by well designed and sharply localized lateral ventilation. If you were to give me a detailed description of the conditions under which your men work, including the precise nature of their work, the numbers employed, the length of time employed per day and per week, and the general set-up of the plant with respect to other employees in the vicinity, I could probably give you an opinion which would be approximately correct.

You mentioned "weekly check" on your men, and this, I presume to be either a clinical examination, or the examination of a blood smear. If it is the latter, I should like to point out to you the impracticability of determining the degree of exposure and the safety of the men by this means. Unless the exposures are very severe indeed, little useful information is given by the examination of regular blood smears. It would be much better to determine the magnitude of the lead exposure either by sampling the air, or by studying the blood and excreta of exposed persons.

Very truly yours,

Robert A. Kehoe, M. D.

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