PLAINTIFF'S
EXHIBIT
BRK-140

April 6, 1953

Charles Meyers, Safety Director
New Departure Division
General Motors Corp.
Sandusky, Ohio

Dear Mr. Meyers:

A copy of a survey report written by DeWitt Huffman, Industrial Hygiene Engineer, is enclosed for your information and guidance.

Please feel free to call on this Division at any time that we can be of service to you.

Very truly yours,

Superintendent.

DDH:mmm
Enc.

29

DIVISION OF SAFETY AND HYGIENE
INDUSTRIAL COMMISSION OF OHIO

April 6, 1953

Re: New Departure Division
General Motors Corp.
Sandusky, Ohio

James H. Fluker, Superintendent
Division of Safety and Hygiene
Columbus, Ohio

On March 27, 1953, a visit was made to the above named company to check on occasional health hazards in connection with welding of lead.

Contact was made with Charles Meyers, Safety Director, and Michael Kryeski, Assistant Plant Engineer.

The company manufactures bearings and other precision parts.

The company employs approximately six or eight welders in their maintenance department. One of the jobs of these employees is to weld lead on anodes for chromium plating. The company has established the policy that one welder would work on this job each week until all employees were familiar with this type of welding. The welding consists of making fillets on lead plates and also welding lead to copper. This welding is done on pieces approximately 3"x2"x6" thick. The lead consists of 95% lead and 5% antimony. The anodes are brought to one location where the welding is done. The company has provided local exhaust ventilation by means of a slot type orifice attached to a 3" flexible tube. This ventilation is not adequate, providing only 100 f.p.m. air velocity 6" from the orifice and only in line with the orifice.

One employee, after working a short period on the welding went to his doctor with cramps and other disturbances and according to this employee the doctor diagnosed it as lead poisoning. No blood tests or other analysis were made.

A thermocouple was obtained and welded into the material to see what temperature was reached. The temperature indicated varied between 550°F and 700°F. When the hydrogen flame was played directly on the thermocouple, a temperature of 800°F was indicated. The following table of maximum theoretical concentration of lead fumes that could be reached based on the vapor pressure of lead is of interest.

Temp °F.	No. of Lead/10 CuM
572	.00006
752	.02
932	2.0
1022	8.0
1112	40.0

This information was obtained from "Atmospheric Lead Contamination from High Temperature Lead Baths" by H. D. Tebbens and appeared in the January 1937 Journal of Industrial Hygiene and Toxicology.

From the above figures, it would appear that it would be impossible to exceed the maximum allowable concentration for an eight hour day of 1.5 mg per cubic meter per 10 cubic meters which is the limit set by the Ohio Health Code and by the American Conference of Governmental Industrial Hygienists.

Arrangements are now being made to have analysis of lead samples made by an outside laboratory. Personnel of this Division will take the samples at a later date.

Employees reported that occasionally galvanized material is welded in this plant and that no ventilation has been provided since the fan they used for this purpose was taken away from them. The assistant plant engineer issued instructions that no more welding or cutting of galvanized metal would be done until that operation had been cleared through his department and adequate ventilation provided.

Since there is always a potential hazard when lead is melted, it is recommended that the company provide a booth for the welding of lead, ~~and~~ with a face velocity of approximately 150 f.p.m.

Very truly yours,

30

DeWitt Huffman,
Industrial Hygiene Engineer.

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