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June 23, 1943

Lima Locomotive Works, Inc.
Lima, Ohio

Gentlemen:

Copy of a report submitted to me by Mr. DeWitt Huffman is enclosed for your information and guidance.

Compliance with the recommendations made in this report will, undoubtedly, assist materially in benefiting the health of your employees. We trust you will carry them out at your earliest opportunity.

If there is anything further this Division can do to assist you, kindly let us know.

Very truly yours,

Superintendent

EDH:MLA
Enc.

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June 22, 1942

Mr. Thos. P. Kearns, Supt.
Division of Safety and Hygiene
The Industrial Commission of Ohio
Columbus, Ohio

In re: Lima Locomotive Works, Inc.
Lima, O

On June 16, the writer, accompanied by Mr. F. W. Klett of this Division, visited the above named company. This visit was made on the initiative of the writer in order to check dust conditions before any claims for silicosis are filed rather than waiting until a claim has been filed.

Contact was made with R. E. Mertz, Insurance Superintendent; L. H. Hunt, Safety Director; H. F. Roush, Foundry Superintendent; Donald B. Miller, Assistant Foundry Superintendent.

This company manufactures castings for locomotives, power shovels, cranes, and commercial castings.

The foundry is located in a building about 500' x 100' x 60' to the top of the monitor which runs the full length of the building. There are 5 exhaust fans at the east end of the building at which place the shakeout takes place. There is an exhaust over the shakeout. Sand from the molds is dumped through a grating into a hopper located in the floor and conveyed to the sand preparation equipment. In this equipment the material is screened, moistened and put through a muller. It is conveyed to hoppers from which the sand is valved into the flask for the making of molds. The shakeout takes place at night at the east end of the building where the sand preparation machine is located.

The foundry was orderly but there was considerable dried sand on the floor from which dust would originate. Hill and Griffith Faultless Parting Compound which is a silica parting compound, is supplied to the molders.

The cleaning room is located in an extension to the foundry and is separated from the foundry by a partition. About 30 employees work in the cleaning room grinding castings with portable grinders and about 30 employees are engaged in the chipping of castings. The building in which they work is about 120' x 60' x 60' to the top of the monitor which extends lengthwise in the building. Two exhaust fans are located in the ends of the building near the top. Considerable dust was observed in the cleaning room and several employees were wearing respirators. All employees were wearing goggles. Three stationary grinders which are not ventilated are located in the cleaning room and 6 rattlers which are ventilated are located in this room.

Sand blasting is done in the open air by two employees wearing helmets (not air line) and Bureau of Mines approved respirators. They use sand of large particle size. They started sand blasting a casting when the writer was present and the cloud of black dust from this casting completely obliterated the two sand blasters from view. It was necessary to close the door in the cleaning room to keep this dust from drifting into the cleaning room. In the opinion of the writer this is a very bad condition which should be corrected.

Dust Samples

(a) A sample taken over a period of 5 minutes at 2:25 P.M., while walking around the center of the cleaning room and for the last 2 or 3 minutes of the sample standing on a casting in the center of the room, contained 27.5 million particles of dust per cubic foot of air.

(b) The next sample was taken for a period of five minutes at 2:35 P.M., near the shakeout. Four men were shoveling sand through the grating covering the hopper in the floor during the time the sample was taken. For three and one-half minutes the writer stood where the air imbibed passed him to the point where the dust was originating from these four men; the remaining one and one-half minute he stood where dust from the four men shoveling sand would be included in the sample. This sample contained 15.1 million particles of dust per cubic foot of air. The exhaust on the shakeout was not running at the time this sample was taken. In May 1939 Mr. L. M. Merritt obtained a count of 16.0

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Lima Locomotive Works, Inc.
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million particles of dust per cubic foot of air in approximately the same location. He pointed out that there were no men working in this section of the room at the time this sample was taken.

(c) Another sample was taken for a period of five minutes at 2:50 P.M., while walking down the center of the foundry. This sample contained 8.6 million particles of dust per cubic foot of air.

(d) There is a small brass foundry connected with the main foundry but separate by a partition. The sample taken in this foundry over a period of five minutes at 3:10 P.M., contained 4.4 million particles of dust per cubic foot of air. There are four brass melting furnaces located in this foundry which are not hooded but there are stacks in the ceiling over them. The writer pointed out that where he had encountered such installations of this type he had found them unsatisfactory and that the hood should be placed over the melting furnaces.

An attempt should be made by the management to keep the dust concentration below 5.0 million particles of dust per cubic foot of air and preferably below 2.0. The writer is greatly concerned about the condition in the cleaning room and feels that steps should be taken immediately to cut down the amount of dust in this room. He also wishes to call the attention of the management to section 61, Bulletin 203, known as the Foundry Code: "Sec. 61. Where castings are cleaned or shipped in molding or casting rooms, there shall be provided suitable screens, partitions or other effective means to protect employees against flying chips and excessive dust..."

It is recommended:

1. That a non-silica parting compound be supplied to the molders.

2. That the exhaust at the shakeout be run when employees are shoveling sand at that point.

3. That a sand blast cabinet be constructed for the cleaning of castings.

4. That employees sand blasting castings be equipped with an approved air line helmet.

5. That hoods be placed over the brass furnaces.

While visiting this plant it was pointed out that some difficulty had been encountered from fumes in a cyanide pot used for heat treating. At the present time this cyanide pot is located in a small building with three sides. The material is lowered and removed from the cyanide pot by a hand hoist. It is recommended that a semi-hood which will not interfere with the operation of the hoist be constructed to which an exhaust fan is attached.

Respectfully submitted,

DeWitt Huffman,
Safety Engineer

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