United States Steel Corporation

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Interorganization Correspondence

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GENERAL SUPERINTENDENT HOMESTEAD WORKS

PLAINTIFF'S EXHIBIT USX-127

July 2, 1976

To: Mr. Dean Wilson
General Superintendent
Homestead Works

From: T. M. Civic

Ref BSA

Subject: Asbestos Survey 160", 100", 48" and 45" Mills and Wheel and Axle Plant

This survey, part of an overall plant survey, reports the results of the asbestos exposure tests conducted by T. M. Civic, Environmental Health Engineer, on June 8 and 9, 1976 at the 160", 100", 48" and 45" Mills of the Homestead Works and the Wheel and Axle Plant. The occupations monitored were selected on the basis of the responses obtained from the various divisions pursuant to your letter of February 13, 1976.

Criteria

OSHA limits an employee exposure to asbestos dust to 5 fibers, longer than 5 micrometers per cubic centimeter of air based on an 8-hr. time-weighted average exposure. On July 1, 1976, the 8-hr. time-weighted average exposure limit will be reduced to 2 fibers/cc of air. OSHA has recently proposed to further reduce the daily 8-hr. exposure limit to 0.5 fibers/cc of air.

Conclusions

Homestead Works

The results of samples, as shown in Table 1, indicate asbestos fibers are released from the asbestos gloves, mittens and clothing worn by the 160" Mill Stamper, 100" Mill Cinderman and 45" Mill Scarfer. Time-weighted average exposures to asbestos fiber were 0.05 fibers/cc, 0.14 fibers/cc and 0.08 fibers/cc for the Stamper, Cinderman and Scarfer, respectively. Air samples collected in the 48" Mill on the employee handling and tearing asbestos sheets during the loading of hot plates into railroad cars indicated a time-weighted average exposure to asbestos fiber of 0.01 fibers/cc.

Wheel & Axle

The results of the samples, as shown in Table 2, indicate the laborer cleaning below an axle heat treat furnace had a time-weighted average exposure to asbestos fiber of 0.36 fibers/cc of air. Air samples collected while a Millwright cut a gasket

material containing asbestos indicated the employee was not exposed to airborne asbestos fibers.

Although asbestos exposures of all occupations monitored were well below the permissible limits, all exposed personnel exposed to asbestos fibers should be included in a medical monitoring program, as outlined in the Federal Register, Vol. 39, No. 125, June 27, 1974, Section 1910.93.

Results of the Survey

Homestead

At the 160" Mill, air samples collected on the Hot Shear Stamper, whose only exposure to asbestos was from the wearing of asbestos gloves, indicated a time-weighted average exposure to asbestos of 0.05 fibers/cc. These gloves are similar to those worn by the 100" Mill Markers and Stampers, and the air samples collected on April 8 on these employees indicated similar asbestos exposures.

At the 100" Mill, air samples collected on the Cinderman, one of the furnace personnel who wear asbestos mittens, indicated a time-weighted average exposure of 0.14 fibers/cc of air.

Based on the results of this survey and the results of the previous survey, it is evident the asbestos gloves and mittens worn are responsible for the asbestos exposures observed and efforts should be directed toward replacement with non-asbestos materials. Discussions with operating personnel seem to indicate a brushed leather double insulated glove may be a suitable replacement. Until such times that a substitute glove containing no asbestos is issued, employees should be included in a medical monitoring program.

Similarly, air samples collected on a Scarfer, working in the 45" Mill, whose only exposure to asbestos was from the wearing of asbestos clothes, indicated a time-weighted average asbestos exposure of 0.08 fibers/cc of air. All Scarfers required to wear similar asbestos clothing should be included in a medical monitoring program until a substitute material can be found.

At the 48" Mill, Shipping and Piling Area, samples collected during the handling and tearing of the asbestos sheets during the loading of hot plates into railroad cars indicated the employee involved in the above operation was exposed to airborne asbestos fibers. Although his time-weighted average exposure was 0.01 fibers/cc of air, it is required he be included in a medical monitoring program. It is recommended that Kaowool, an alternate material, be substituted for the asbestos at this operation to eliminate the need for medical monitoring.

This report concludes the exposure evaluations of the employees involved in the different applications of asbestos-containing materials in the 45, 48, 100 and 160" Mill except for the use of asbestos sheets used by the burner to cover hot plates during flame cutting to protect his feet. No air samples were collected because the flame cutting operation is not a routine procedure and was not operating at the time of the survey; however, if no effort is made to find a substitute for the asbestos, arrangements should be made to have air samples collected to evaluate the burner's exposure to asbestos.

Wheel & Axle

At the Wheel & Axle Plant, asbestos usage was limited to asbestos tape and rope, asbestos pipe insulation, asbestos gloves, asbestos curtains on the wheel heat treat furnaces, asbestos gasket materials, and asbestos insulating brick. Efforts are being made to replace (1) asbestos gloves with gloves not containing asbestos; (2) asbestos pipe insulation with fiberglass insulation; (3) asbestos curtains with "Kaowool"; (4) asbestos rope and tape with ceramic fiber or linen with substitutes. If these materials are not replaced with materials that do not contain asbestos, arrangements should be made to evaluate employee asbestos exposures.

Asbestos exposure tests conducted on a Millwright cutting gasket material (Johns-Manville Style 1600 and Garlock HHD) indicated no exposure to asbestos fibers. The gasket materials were completely encapsulated with a plastic-type coating, thus preventing the fibers from becoming airborne.

Air tests conducted on a laborer cleaning out under an axle heat treating furnace indicated an asbestos exposure of 0.36 fibers/cc of air. This exposure to asbestos originates from the asbestos contained in the insulating brick. Most manufacturers of insulating and fire brick have removed the asbestos from their products. We suggest purchasing asbestos-free brick for relining of furnaces. Until the brick can be replaced with brick not containing asbestos, all employees engaged in tear-down operations should be included in a medical monitoring program.

W. C. Janes

TMC/mdd
Attachments

Table 1

Asbestos Survey

Homestead Works

6-8-76

Location	Remarks	Asbestos Exposure Tests Fibers/cc	Time-Weighted Average Exposure Fibers/cc
160" Mill Hot Shear Stamper	Wears asbestos gloves	0.04 0.07	0.05
100" Mill Cinderman	Wears asbestos mittens	0.09 0.24	0.14
45" Mill Slab Yard Scarfer	Wears asbestos coat and pants	0.10 0.04 0.13	0.08
48" Mill Shipping & Piling Area	Breaks asbestos sheets for loading of Hot Plates in RR Cars	0.02	0.01

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