



for A:

PLAINTIFF'S
EXHIBIT
USX-124

Interorganization C

Date: October 22, 1973

To: Kenneth M. Morse, Director
Environmental Health

From: R. H. Daibert

Subject: Asbestos Survey
Carrie Furnaces

This memo covers an asbestos survey conducted by McGill University personnel at No. 3 and 4 Blast Furnaces on September 4 and 5 and October 3 and 4, 1973. The purpose of this survey was to determine the asbestos exposure of the blast furnace workers while wearing asbestos protective clothing during casting. The McGill University personnel were conducting this survey under contract with Raybestos-Manhattan Corporation and with cooperation from Headquarters Environmental Health and Homestead Works management.

The McGill University personnel sampled using open-face membrane filters and MSA Monitaire pumps at a sampling rate of 2.0 lpm. The samplers were attached to the workers immediately before the cast and removed shortly thereafter. The workers were instructed to keep the filter outside their coat, but under their hood. On the last day, 8 new sets of asbestos clothing, of the same type currently being used, were distributed and the sampling concentrated on the workers wearing this new clothing. During each cast, one worker also wore a USS sampler. Approximately 50 samples were collected by McGill University during the survey, and 9 concurrent samples were collected by USS.

The results of the USS samples are given in detail in Table No. 1 included. Sample results are limited and may not be highly accurate as discussed below. However, they indicate the time-weighted asbestos exposure of the keeper, 1st helper, 2nd helper and 3rd helper to be 0.9, 0.6, 1.5 and 0.2 fibers per cubic centimeter respectively. The concentrations during individual casts ranged from 0.4 fibers per cc at a 3rd helper to 4.0 fibers per cc at a 2nd helper. The writer was told that the results of McGill University's samples on September 5 ranged from 0.8 to 6.0 fibers per cc. Their results from the last two survey days are not yet known.

From the above, it would appear that asbestos exposures due to wearing asbestos protective clothing are within both

USX0000773

18A

-2-

the present and coming 1976 standard, on both the time-weighted average and ceiling basis. However, the magnitude of the exposures is such that periodic monitoring may be required under the provisions of the OSHA asbestos standard. Needless to say, such a monitoring program would be large in scope and would involve many areas in our steel-making operations.

Several problems which affected or could affect the accuracy of the USS (and McGill) sample results should be noted. First of all, 5 out of 9 USS samples showed filter damage in the form of smudges and/or fingerprints on the filter surface. Extraneous dust loadings on the filters were generally heavy, and in 5 of 9 instances, were felt to interfere with the asbestos fiber counting. One sample was so heavily loaded that fiber counting was impossible. Another potential source of error may occur when the worker puts on his asbestos hood. Should the asbestos cloth scrape against the filter holder, a localized "cloud" of asbestos dust could be deposited on the filter and thus lead to high results.

The 8 new suits of asbestos clothing, provided free of charge by Raybestos-Manhattan, were left with the workers who were told to wear them in a normal manner. Dr. Magenhiemer, Raybestos-Manhattan, stated that he would like to resurvey these workers after the suits had been worn for a few months. He also expressed a desire to do another survey using suits made with a different type of asbestos cloth. The McGill University people appeared to be confused over these plans. It can be assumed that we will be contacted if more sampling is desired.

To summarise, the results of limited sampling at workers wearing asbestos protective clothing indicate an asbestos exposure within both the current and 1976 OSHA standard. However, the exposure levels are by no means insignificant and may lead to an extensive periodic monitoring program including all workers wearing such clothing. Several problems were noted which could have effected the accuracy of the above results, either on the high or low side. These results may indicate the need for independent work on our part; however, before deciding on a course of action, the McGill University results should be obtained and evaluated.

R. H. Daibert

R. H. Daibert

RHD/mdd
Attachment

cc: W. C. Jones ✓

USX0000774

TABLE NO. 1

Asbestos Dust Samples

Carrle Furnaces - September 3 and October 3 & 4, 1973

Blast Furnace Occupation	Sample No.	Asbestos Concentration fibers/cc	Sample Duration (Time of Cast) Minutes	Filter Smudged- Fingerprints	Filter Condition Hard to Count Due to Heavy Dust Overlay
Keeper	432	1.3	50	Yes	Yes
	134	2.2	59	No	Yes
1st Helper	121	1.6	38	Yes	No
	479	Could not count	57	Yes	Yes. Impos- sible to count.
2nd Helper	21	0.3	51	No	Yes
	464	4.0	60	Yes	No
	148	4.0	60	No	Yes
	20	2.8	58	No	No
3rd Helper	107	0.4	65	Yes	No.

Notes:

OSHA Standard: 5 fibers per cubic centimeter time-weighted average over 8 hour workday;
10 fibers per cubic centimeter ceiling.

About 3 casts are made per turn.

USX0000775

1

13

1

1

1

4

1

1

1

1

2