D.N.CO.

INTER-OFFICE MEMORANDUM

TO J. H. Walton
AT 1586 KB

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DATE November 13, 1972
FROM A. J. Trommershausen

COPIES TO C. E. Caprye
~~P. J. Franklin~~
J. P. Hughes, M.D.
K. J. Singer

AT 2675 OB

SUBJECT Industrial Hygiene Survey - Kaiser Gypsum, Delanco

On October 25-26, 1972, an Industrial Hygiene Survey was made at the Delanco plant, with the primary purpose of evaluating asbestos dust exposure in the accessories department.

A. Accessories Department

This department produces mortar which consists mainly of limestone (whiting) and mica, with small amounts of asbestos and other additives.

Pallets of dry materials in bags are hoisted up to a platform where the workmen cut open the bags and dump them into a ventilated hopper. The dry materials are moistened with liquid additives and water, and thoroughly mixed.

The one or two bags of asbestos (100-lb. bags) are generally placed on top of the pallet and dumped first; this dumping takes approximately one-half minute. One batch is made about every 45 minutes, so it is obvious that the amount of asbestos used is relatively small. However, even this small amount can cause hazardous concentrations if precautions are not taken.

While dry products are made and bagged, the main product is a moist ready-to-use material, which is poured into metal or plastic pails; these pails are then capped and sealed.

As you know, the asbestos standard specifies an 8-hour time-weighted maximum concentration of 5 fibers per cc of air (2 fibers starting in 1976), and a ceiling concentration of 10 fibers per cc.

Since it is still not clear how to obtain measurements of ciling concentrations with short exposures, only time-weighted samples were taken. A personal sampler was attached to Walt Taylor, the mixerman, and three samples were taken, starting at 10 AM and stopping at 4:30 PM. Taylor was chosen since it was felt that he had the greatest exposure. The results of the tests are as follows:

Sample	Liters Sampled	Fibers/cc
1D	188	0.7)
2D	272	0.7) Ave. = 1.0
3D	120	1.6)
Blank	--	0

KG-0024

As can be readily seen, the concentrations found are below the time-weighted average limit of 5 fibers. This was not unexpected. However, if it is assumed that all of the asbestos dust is generated during the half minute or so every 45 minutes, a simple calculation would show that the ceiling concentration limit of 10 fibers/cc would be greatly exceeded for these short periods.

Although the Department of Labor has not made a final decision, it appears that a compromise will be reached and that a minimum sampling time of 5 minutes will be specified for ceiling concentrations. Based on the assumption of 5 minutes, the ceiling concentration would be calculated to be about 57 fibers/cc.

In summary, it appears that the 8-hour time-weighted average is less than the standard, and the ceiling is over the standard.

A number of things can be done to reduce the ceiling concentrations. All of these were discussed with the plant people, and some changes have already been made. Items discussed were:

1. Improve the hood over the hopper.
2. Divide asbestos bags on top of the hopper instead of the floor.
3. Obtain 50-lb. bags of asbestos, which would eliminate the dividing of bags.
4. Order plastic encapsulated pallets of asbestos, to reduce and control bag breakage.
5. Clean up spills promptly with a vacuum cleaner.
6. Repair leaks in the system.
7. To avoid dusting, carefully fold empty asbestos bags and place in plastic bags, label and send to sanitary landfill.

In addition to the above items, a warning sign should be installed as required by the standard. Copies of this standard were left at the plant. The Pennsauken Industrial Medical Clinic is capable and prepared to perform the "asbestos" physical examinations on the 6 workmen involved (5 hourly, 1 supervisor).

The workmen should continue to wear respiratory protection while handling asbestos. The 3M disposable mask #8710 is satisfactory and inexpensive.

B. Noise

Noise levels were found to be about the same as those reported on my previous visit on July 15, 1971, with the exception of the knife area, which was about 2-3 dBA lower (88-89 vs. 91-92 dBA).

As is well known, the bale breaker is considerably above the standard. Although the operator wears ear protection, noise control is indicated since noise from the bale breaker causes hazardous noise levels in other areas, such as the bundling and mixer areas. The ideal solution is an enclosure and an automatic feeder.

The hook strip machine gave readings of 92-95 dBA, but at the RF corner bead machine - where the operator spends most of his time - the noise levels were only 87-88 dBA, with peaks to 93 dBA, and is probably not hazardous.

Some good noise control experimentation was being conducted on the roll former by using non-metallic stops. This looks like a "winner" and further work should be encouraged. Noise levels measured at the machine were in the 105-108 dBA range. The crew working on this machine should wear ear protection.

The Pennsauken Clinic has an excellent audiometric testing set-up and is presently performing pre-employment audiometric tests. Periodics should be scheduled on an annual basis for those working on the bale breaker, roll former, bundling area and calcine areas. A re-evaluation should be made after the bale breaker has been enclosed.

C. Radiation

The board line has an "AccuRay" gauge manufactured by Industrial Nucleonics in Columbus, Ohio.

This gauge contains a sealed radioactive source which contains Strontium 90. The Strontium 90 produces soft x-rays (gamma rays) which are potentially hazardous; however, safeguards have been built into the gauge so that exposures to the workmen should be insignificant if reasonable precautions are taken. The plant has an arrangement with Industrial Nucleonics, which makes the prescribed tests and inspections regularly every six months. My only concern during my visit was the absence of a warning label - if there was a label, it was not in a highly visible location. Besides the legal requirement, the purpose of the label is to assure that workmen do not place their hands or fingers directly in the path of the gamma rays.

Don Stevens of Industrial Nucleonics assures me that the appropriate labels will be affixed during the next inspection in January 1973. (He will also check the gauge in Jacksonville)

A copy of the AEC General License Provisions is attached for your information.

The assistance of Darrell Thomas, Ken Singer and George Benedict were greatly appreciated during the survey.

gb
Attachment

P.S. I have just been advised that Ken Singer has already made arrangements for the radiation signs.