GHQ
May 21, 1970

J. R. M. Hutcheson - AFD Asbestos

Respiratory Protection for Asbestos
W. L. VanDerbeek's letter 5/4/70

We have a number of filter type air purifying respirators approved by the Bureau of Mines for pneumoconiosis-producing dusts that are on our Johns-Manville approved respirator use for exposures to asbestos, silica, talc, graphite, and other less toxic or nuisance type dusts. We include only Bureau of Mines approved respirators on our Johns-Manville approved list of dust respirators.

The J-M approved dust respirators are as follows:

	Bureau of Mines Approval Number
Mine Safety Appliances Company - Dustfoe 77	BM-21B-97
" " " " - Dustfoe 66	BM-2166A
" " " " - Customa Comfo w/S Filter	BM-21B-69
American Optical Company - R2000 w/25 (BM-2145) 90 Filter	(BM-2172)
" " " - R3000 w/30 Filter	BM-21A-78
" " " - R5000 w/90 Filter	BM-2172
Willson Safety Products - Mono Mask 600A	BM-2170
" " " - Single Cartridge #460	BM-2161
" " " - Double Cartridge #880C	BM-2162

The above respirators are approved by the Bureau of Mines either under Schedule 21 or 21B. These Bureau of Mines tests are based on silica dust particulates and not asbestos. Although there are no official tests designated for asbestos fibre, filters capable of protecting against silica dust will also protect against asbestos.

When the threshold limit value for asbestos was 5 million particles per cubic foot of air, and prior to the marketing of the MSA Dustfoe 77, we recommended respirators approved under Schedule 21.

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Upon ACGIH recommendations of the 12 F/CC or 2 MPPCF threshold limit value, we encouraged the use of Schedule 21B approved respirators. The Dustfoe 77 is the lightest, most comfortable equipment available under this Schedule. Schedule 21 allows 3 mg. penetration, which is about twice that allowed by Schedule 21B.

In the latter part of 1969, Billerica Plant was cited by the State of Massachusetts for the use of Dustfoe 77 respirators. They contended that asbestos was a "highly toxic dust" requiring respiratory equipment that would filter less than 2.4 million particles per cubic foot. They used the ACGIH Intended threshold limit value of 2.0 MPPCF for asbestos as their authority. The only Dispersoid Respirators for Highly Toxic Dusts available were dual cartridge, heavy and uncomfortable. The employees refused to wear them. After considerable negotiation we were successful in obtaining consent to use Dustfoe 77s.

It is my understanding that you need a lightweight respirator that will meet the reasonable employee acceptance at one Jeffrey location for a short time limit, approximately 18 months. It is also my understanding that you have tried the MSA Dustfoe 77 and have not been pleased with it.

There are 3 types of masks being used in our Manville Textile Dept. to which W. VanDerbeek referred. They are the MSA Dustfoe 77, MSA Dustfoe 66, and the Willson Monomask. They are being worn with a washable knitted cotton face cover which keeps the worker's face from contact with the rubber respirator face piece. These cotton face covers especially add comfort to wearing a respirator when heat is a factor. As a part of the daily respirator maintenance program, the cotton face covers are collected, laundered and redistributed. All masks are also collected, disassembled, washed in an automatic dishwasher, re-assembled with new filters installed, placed in clean plastic bags and sealed, and redistributed daily. Individual masks are not specifically assigned to an employee. He does, however, receive a clean, sterile mask at the beginning of his shift.

I have been advised that you were giving consideration to using the American Optical "Beehive" semi-disposable mask. There are two of these masks marketed, AO-R9100 and AO-R9100T. The difference is in the filter media and related Bureau of Mines approvals. The AO-R9100 is BM-2137 approved for pneumoconiosis-producing and nuisance dusts, such as, borax, carbon, glass, grain, graphite, cement, lime-stone, gypsum, coke, charcoal, wood, flour, and other less toxic and inert dusts. The AO-R9100T is BM-2144 approved for all dusts not significantly more toxic than lead, such as, lead, barium, iron, nickel, manganese. The AO-R9100T would be more suitable and efficient for filtering asbestos and silica dust than the AO-R9100, however, as with all of the more efficient respirators, the breathing resistance is substantially greater.

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Although the American Optical R9100 and R9100T are BM Schedule 21 approved, we have not included them on our J-M approved list. The primary reason being that they do not lend themselves to cleaning and maintenance. When the filter media becomes blocked and breathing resistance increases, the only alternative is to discard the respirator or shake out and beat the filter to free it of dust. The shaking out or beating procedure will remove some of the blockage but, at the same time, will contaminate the inside of the filter, plus creating respirable dust during the cleaning. Also, face fit tests of the AO-R9100 by American Optical indicate that cotton face covers must be used with this respirator to provide minimal face piece leakage for protection against silica and asbestos. In order to provide maximum protection to the employee, meet governmental agency requirements, and protect management and the Corporation against negligence litigation, it is essential that we furnish the best safety equipment suitable for the operation. To accomplish this with the AO-R9100 series respirator, it would be necessary to discard them daily, in moderate to heavy exposure areas, at a cost of approximately $2.30 each in the U.S.

Under separate cover, I am forwarding you an MSA 77, MSA 66, William Monogmask, AO-R9100 and several cotton face covers for the respirator face pieces. I suggest you evaluate each of these respirators, giving consideration to the foregoing information.

If you are in agreement with discarding the AO-R9100 respirators when they become clogged and assume the cost of replacement, we are agreeable to approving this equipment for your one Jeffrey operation on a limited time basis. It must be recognized that this could present an employee relations problem with other Jeffrey people. The AO-R9100 is more comfortable than the more efficient MSA Dustfoam, therefore, employees in other Jeffrey locations may want to substitute them for their present equipment.

If you have other types of respirators that you wish us to evaluate for approval, we will check them.

Approval and administration of the respiratory equipment program is an Industrial Relations responsibility. Will you, therefore, advise me of your decision.

C. L. Sheckler

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