UNION CARBIDE

INTERNAL
CORRESPONDENCE

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UNION CARBIDE CORPORATION P. O. BOX 8004, SOUTH CHARLESTON, W.V. 25303
SILICONES AND URETHANE INTERMEDIATES
SOUTH CHARLESTON PLANT

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Asbestos Exposure Effects
Potential of Non-Insulator
Crafts

Asbestos dust measurements in the plant are consistently below OSHA permissible exposure limits (see attached summary). However, when we detect even a fraction of those limits in our air samples I get a feeling of apprehension because I question if any level of inhalation exposure is safe in absence of respiratory protection.

Airborne asbestos dust measurements are expressed in terms of the number of fibers that are 5 microns or more in length in one cubic centimeter of air. Numerical estimates should be evaluated with caution according to OSHA, because air concentrations used are a matter of convenience and "should not be evaluated without interpreting the meaning of the units."(1) For example, the OSHA permissible limit for an 8-hour day is 2.0 fibers (5 μ or longer) per cc of air. This may seem like a small amount of asbestos which is conventionally determined using a microscope, but in my opinion represents a potentially hazardous condition. In physical terms 2.0 f/cc equals 2,000,000 fibers per cubic meter of air (f/m^3). Humans inhale about one cubic meter of air per hour, depending on degree of activity. Thus, at this concentration a worker would inhale roughly 16,000,000 fibers 5 microns in length over an 8-hour day - disregarding the possibility of an infinite number of shorter fibers being present under some conditions.

Based on our measurements such conditions rarely exist in plant workplace environments. Nevertheless, existing, natural defense mechanisms alone (respiratory system mucous and nasal hair) may be inadequate for even concentrations at the lowest reliable detection limits.

I feel good about the manner in which exposure control has improved among Insulator craft groups due to establishment and maintenance of adequate standards. My feeling of apprehension, however, is due to concern about potential chronic health effects among all other crafts whose exposure concentration may be comparatively lower, perhaps less frequent but, in any case, generally without the benefit of respiratory protection.

(1) Bureau of National Affairs, Occupational Safety & Health Reporter, November 11, 1983.

As you know, total elimination of asbestos-contained materials in the plant is unlikely and impractical because of cost, safety or lack of suitable replacement material-reasons. A gasket failure, for example, due to use of an unsuitable substitute could potentially cause a far more hazardous condition than any conceivable one related to use of asbestos-contained gasket material.

Occupational exposure to asbestos can be effectively controlled in most plant situations by using wet-method handling procedures and an appropriate dust mask commonly used by Insulators throughout the plant. I urge you to consider taking action necessary for strict enforcement of mandatory use of respiratory protection by all employees who use or handle any asbestos-contained materials, e.g., gasket fabrication/removal/disposal, brake lining replacement or even inspections, insulation removal/disturbance related to a wide variety of job tasks performed by various craft groups, etc. Such action would virtually prevent occurrence of any inhalation exposure.

Please call me if you have any questions or comments.

Thank you.

Bill Young

WCY:bl

Attachment