BIOLOGICAL EFFECTS OF ASBESTOS

LYON, October 2-5, 1972

Paper 20

Criteria for Environmental Data and bases of Threshold Limit Values -

Environmental Data in Industry.

S. Holmes.

INTRODUCTION

A paper on the theory and application of hygiene standards is to be presented at this conference by Berry (Paper 22). In this paper he outlines the establishment of the hygiene standard for chrysotile by the British Occupational Hygiene Society in 1968, being careful to point out that the data was based on experience with a group of men having a minimum of 10 years exposure working in a particular asbestos textile mill at a particular time (June, 1966). No account was taken of men who had worked for the minimum period but had left the industry before that date. Thus the information, although the best available at the time, was, to say the least scanty for the purpose and some of us who were associated with it have become increasingly concerned with the authority with which it has become invested in the international field. The time has therefore probably arrived for an up-to-date re-appraisal of the original data and the study of new data which has since become available elsewhere. Unfortunately, any retrospective study will be unlikely to meet all the conditions necessary to calculate a reliable standard and therefore a prospective study must be undertaken, properly designed and directed towards the collection of the right information.

THE MEDICAL ASPECT

The B.O.H.S. standard for chrysotile was established at a dose level designed to limit to 1% the risk of contracting the first signs of asbestosis. The criterion used by Knox was the presence of persistent basal rales. He also looked at X-ray changes, using the techniques available at the time and noted that while all subjects exhibiting X-ray changes also had persistent rales, some subjects had rales without X-ray changes. He therefore concluded that rales gave the earliest demonstrable sign. Since that time, X-ray techniques have improved

variations in most processes, although the recently introduced U.S. standard calls for an 8 hour average. Samples should be taken at reasonable intervals to ensure that possible long-term variations in dust levels due to changes in asbestos fibre quality or variations in performance of dust control equipment are adequately covered. The proposal under the D. of E. Medical Surveillance Scheme to base the exposure of the worker on a single dust sample taken at two-year intervals can hardly be regarded as satisfactory, but the industry itself may be able to supplement this from its own measurements.

AREAS TO BE COVERED

In establishing standards related to the asbestosis risk, it is advisable to choose situations, such as factory operations, where dust concentrations do not fluctuate widely. It is unwise to use for this purpose processes experiencing high peaks of concentration, because too little is still known about the effects of such peaks, albeit for short periods of time, on the normal lung clearance mechanisms.

To assess possible difference in the effects of the different type of asbestos, the areas of study should be chosen where the exposure is to one type only - mixed exposures should be avoided. Even in one type of asbestos, there may be variations between deposits from different mining locations which could have a bearing on their biological effects. It is therefore advisable to keep records wherever possible of the origin of the raw material.

FORM OF THE STANDARD

In establishing the B.O.H.S. standard for chrysotile, it was assumed that asbestosis was a dose-related disease and therefore the adoption of a standard in the form of a limitation on total integrated exposure

21 May 1974

Dr. Raymond T. Moore
NIOSH
Department of Health, Education, and Welfare
Parklawn Building
5600 Fishers' Lane
Rockville, Maryland 20852

Dear Dr. Moore:

With regard to the June 5 hearing on the proposed health standard for occupational exposure to asbestos in coal mine working areas, please be advised that I and one other representative of the Association, to be named, plan to attend.

Sincerely,

R. H. Mereness
Executive Director

RHM/cg

cc: William C. Thurber

OFFICE OF THE DIRECTOR

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON, D.C. 20240

January 10, 1973

Mr. Matthew M. Swetonic
Executive Secretary
Asbestos Information
Association
22 East 40th Street
New York, New York 10016

Dear Mr. Swetonic:

This acknowledges your letter dated December 20, 1972, relative to the Notice of Proposed Rule Making, 30 CFR 71, published in the Federal Register on November 7, 1972. We will give your comments careful consideration before publishing the mandatory standards in the Federal Register.

Sincerely yours,

E. F. Osborn

Director

Asbestos Information Association/North America

22 East 40th Street
New York, N. Y. 10016
212-689-3378

December 21, 1972

Gentlemen:

Attached for your information is a copy of the AIA/NA submission to the Department of the Interior on the proposed two fiber asbestos standard for surface coal mine operations. Because the documents mentioned in the submission have been distributed previously, they are not included in this mailing.

For further background information on this subject, see my distributed reports of November 13 and December 6.

The Johns-Manville Corporation also submitted comments to Interior objecting to the proposed two fiber standard. A copy of the J-M submission will be distributed in the near future. If any other companies in the industry submitted comments, we would appreciate receiving a copy for our files.

Sincerely,

Matt

Matthew M. Swetonic

Enclosure

only be hoped that the continuing accumulation of data relating the morbidity of asbestos workers to exposure to the different types of asbestos may throw further light on the problem.

THE PRESENT POSITION

It is now six years since the data on which the B.O.H.S. standard for chrysotile was based was presented and, in collaboration with Dr. Lewinsohn, arrangements are being made to have the information from the same factory brought up-to-date. Unfortunately, although new subjects will have come within the orbit of the study, others in the original study will have left the industry in the meantime and the results might still be biassed. Under the D. of E. Medical Surveillance Scheme, however, provision is made for a follow up of workers after they leave the industry and provided adequate dust monitoring arrangements are made, the type of data required for the establishment of valid hygiene standards will become available in due course.