

Doc. Control #942

~~XXXXXXXXXXXXXXXXXXXX~~
National Institute for
Occupational Safety and Health

January 7, 1972

W. Clark Cooper, M.D.
Professor in Residence
University of California
School of Public Health
Berkeley, California 94701

Dear Dr. Cooper:

Enclosed for your review is the draft document "Criteria for a Recommended Standard for Asbestos," which we promised in our previous meeting in Rockville. The recommendations in the criteria document are the results of previous meetings with consultants, review by in-house NIOSH staff and discussion with various people throughout the United States. We would not only like to have your written comments concerning the document, but would like your answers to the following questions related to the development of the final criteria document.

1. What are the epidemiologic studies or case reports which indicate that the emergency limit of 5 fibers/cc (TWA) should be lowered, and if so, to what number? In answering this question, please note that several safety factors may be inherent in the emergency standard:

a. The ceiling limit of 10 fibers/cc will have the effect of reducing the TWA in many industries by about 50% (reference Dr. Cooper, page III-19).

b. Procedural standards already in the emergency standard, and new work practices which will be adopted in industries where these have been developed jointly by management and labor, will have the effect of lowering some TWA exposures below 2 fibers/cc.

c. Industrial hygiene engineering controls designed to achieve 5 fibers/cc will result in a lower TWA concentration, i.e., 3 or 4 fibers/cc.

BB 0021767

THIS DOCUMENT WAS NOT A RECORD OF
PPG INDUSTRIES, INC. DID NOT COME FROM
IT'S FILES AND CANNOT BE AUTHENTICATED
BY PPG INDUSTRIES, INC.

NOTE: THIS DOCUMENT DID
NOT COME FROM PPG FILES

4259

NOTE: THIS DOCUMENT DID NOT COME FROM PPG FILES

Page 2 - Dr. Clark Cooper

2. Please indicate your best judgment regarding feasibility in terms of years of achieving a 2 fibers/cc and a 5 fibers/cc(TWA) limit in the following industries:

- a. Mining and milling
- b. Asbestos textile
- c. Manufacture of asbestos cement pipe and other asbestos products
- d. Industrial insulation (application)
- e. Marine insulation (application)

3. Since epidemiologic studies and/or case reports indicate that crocidolite and amosite may be more hazardous than chrysotile and anthophyllite, should there be lower limits for crocidolite and amosite? It should be noted that an analytic counting technique is not really necessary. The lower limit could apply whenever crocidolite and amosite are used in any percentage.

4. What are the next two significant limits lower than 5 fibers/cc(TWA)? Please take into account differences in significant numbers and estimated reliability of counting techniques.

5. Is there any evidence to indicate that a lower limit is needed to protect against mesothelioma than against fibrosis? According to Stewart, there must be enough exposure to produce asbestosis before excess of bronchogenic cancer is produced. Others (Knox, Newhouse, and McDonald) have ranked exposures to asbestos productive of asbestosis and noted an excess of bronchogenic carcinoma only in most heavily exposed groups.

6. Should a time-weighted average exposure limit be the basis of the standard or could it be replaced by a daily average exposure? A proposal to use a daily average implies sampling for a total 8-hour workday or at least a major proportion of that time without the necessity of calculation of a time-weighted average exposure and determination of time sequences necessary for the development of a time-weighted average exposure. This would undoubtedly necessitate longer sampling times and consideration must be given to the ability of the Labor Department Compliance Officers to spend that much time in sample collection. If you feel that a daily average would be appropriate, please indicate what documentation is available in the literature that would relate a daily average exposure to a time-weighted average exposure standard.

7. Consideration of terminology used for labeling. Terminology used in the asbestos document is essentially that which has been developed and used as basic criteria by the Manufacturing Chemists Association in their Guide to Precautionary Labeling of Hazardous Chemicals. This labeling requirement seems to be primarily designed for acute exposure rather than longer term chronic effects. There has been particular

Page 3 - Dr. Clark Cooper

opposition to the use of the term "fatal" in the terms of asbestos exposure. Comments should be made relative to a substitute for this designation if you feel it is desirable. The information included in Section V includes that type of material that would be incorporated for information to the employee and on a material safety data sheet. This sheet is still being prepared by NIOSH and DOL, and it will be sometime before the data sheet has government approval. I would at this time, however, like your comments on emergency treatment, and signs and symptoms of intoxication that should be included in the criteria document.

8. ACCIE has utilized a 30-year work span as being the normal work cycle for the American employee as compared to the 50-year work cycle used by the British and the 40-year work cycle proposed by McDonald for his work in the Canadian Mines. The Act most specifically requires that the criteria developed, and the standard utilized in the United States, should make the assumption that the worker will be employed his full work lifetime and will be exposed for that period of time to any given material (Section 6-b-5). Do you feel that the 30-year work period is a legitimate time span for utilization or should we consider a longer work lifetime for the American employee? This has obvious implications when a total work exposure approach is utilized such as the hundred fiber/cc work year utilized by the British.

9. Under some circumstances, such as emergency or occasional short exposure periods higher than the standard, should it be necessary for industry to apply for a variance for the use of respirators and protective clothing? If not, under what circumstances would you allow the use of respirators for exposure above the standard and for what time periods? Please note that the British have an asbestos limit of 2 (or 4) fibers/cc, yet do not require respirators until the concentration exceeds 12 fibers/cc.

If a delayed standard is adopted, i.e., going down from 5 to 2 fibers/cc over a "reasonable" period of time, over what environmental level should respirators be required, and how long can a worker be expected to have to rely on respirator protection? For example, the British have an environmental limit of 2 fibers/cc but only require respirators above 12 fibers/cc.

I would appreciate your comments by January 12, 1972.

Sincerely yours,

THIS DOCUMENT WAS NOT A RECORD OF
PPG INDUSTRIES, INC. DID NOT COME FROM
IT'S FILES AND CANNOT BE AUTHENTICATED
BY PPG INDUSTRIES, INC.

Charles H. Powell, Sc.D.
Assistant Director, NIOSH
Research and Standards Development

Enclosure

NOTE: THIS DOCUMENT DID
NOT COME FROM PPG FILES

BB 0021769

4261

SUMMARY OF DR. COOPER'S RESPONSES TO QUESTIONS AND COMMENTS

1. Sparse. Refs. 55 & 58 and unpublished work from Pennsylvania all indicate need for 2-5 fibers/cc.
2. Industrial insulation: 2 fibers/cc, 2 yr. Marine insulation more difficult.
3. Weak; separate limits not indicated.
4. Unsure. Suggest 2 and 0.5 fibers/cc.
5. No good epidemiologic evidence but clinical data suggests need for lower limit to protect against mesothelioma.
6. Time-weighted average preferable.
7. _____
8. 30 years not long enough; 40 years more realistic; a few work 45-50 yrs.
- 9a. Variances not needed for short exposures but use respirators.
- 9b. Begin respiration protection at 10 fibers/cc (ceiling).

Recommended Standard:

Average of 2 to 5 f/cc probably necessary to prevent asbestosis; possibility of cancer makes it prudent to adopt the lower figure.

NOTE: THIS DOCUMENT DID NOT COME FROM PPG INDUSTRIES, INC.

BB 0021770

THIS DOCUMENT WAS NOT A RECORD OF
PPG INDUSTRIES, INC. DID NOT COME FROM
IT'S FILES AND CANNOT BE AUTHENTICATED
BY PPG INDUSTRIES, INC.