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S-UC-242

PRESENTATION TO THE OSHA ADVISORY COMMITTEE ON CONSTRUCTION SAFETY AND HEALTH IN REGARD TO THE PROPOSED STANDARD FOR OCCUPATIONAL EXPOSURE TO ASBESTOS IN THE CONSTRUCTION INDUSTRY

January 21-22, 1976

On behalf of

UNION CARBIDE CORPORATION

Date Submitted

January 21, 1976

Submitted By:

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Transcript of Presentation

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before

OSHA Advisory Committee on Construction Safety & Health, January 22,1976

What I would like to do this morning is to discuss the proposed revision of the asbestos standard from a scientific and medical viewpoint. OSHA has based the revised standard on input from these areas and is here that justification, if indeed any exists, for the new standard is presumed to be found. I would like to begin with a brief review and may I have the first slide.

(Slide 1)

What I have done in the first slide is attempt to list the group of asbestos related diseases and, from a personal point of view, evaluate the evidence as to propriety. Asbestosis is a disease caused by excessive exposure to asbestos characterized by the replacement of the normal functioning part of the lung by scar tissue, and if we say the +++ represents complete and total evidence we can say that this indeed is the case. The evidence that asbestosis is caused by excessive exposure to asbestos is firm and uncontestable. Mesothelioma is a cancer of the lining of the body cavity, a lining of the chest cavity, a lining of the abdominal cavity, or a lining of a small cavity that encases the heart. These lining cells can undergo malignant change and become cancer. And here I use ++

view. I think there are suggested evidence but there are no hard data that suggest that this is indeed an asbestos related occupational disease. There have been two reports in the literature suggesting that cancer of the larynx, the voice box, may be associated with exposure to asbestos. I would submit that these are case reports and indeed the evidence is at very, very best highly speculative. May I have the next slide, #2

(Slide 2)

Now in looking at ARD, or asbestos related diseases, there are a series of health issues. And very briefly let me review their status. One of the questions relating to the hazards of any fiber, including asbestos, is its size and its type. There are various forms of asbestos, as you know, as well as there are a large array of organic and inorganic fibers. There is clear evidence that, in addition to the fiber being a potential hazard, its size and shape are major determinants of the hazard the fiber represents. It is fair to say that all of the data both in experimental studies as well as the limited epidemiological data we have in mind suggest that it is the long, thin fiber that is the more hazardous fiber.

Item #2 is the status of health -- the role of multiple external and internal factors involved. By that I mean what, in addition to exposure to asbestos, may be related to the susceptibility to asbestos related disease. I mention cigarette smoking in relation to lung cancer. There are studies now going on to see whether cigarette smoking indeed increases the liability of asbestosis. In terms of internal factors we know that in any given environmental situation

and the difference between the expected which is what the statistician calculates you would normally expect in a population and the observed, that which is indeed being counted. So that its expected may be ten of whatever it may be and the observed is twenty, whatever might be accused in the environment as being responsible for disease really is related to that excess of ten in the expected group over the observed which was normally anticipated. I trust that is clear, I will be happy to answer questions.

Now we come to Item #4 and that really is the hub around which I think all of our discussions rotate and that is the question whether there is a "dose response." Very simply defined, the more you are exposed, over a longer period of time, no matter what it might be to, either harmful or beneficial, the greater your response is going to be. And the second factor we are concerned with, is there a level of exposure to any agent - a level so low that no effect will result? It is this really that represents the philosophic as well as the practical approach to the setting of standards.
The next slide please.

(Slide 3)

Now in this proposal of October 9 , OSHA has stated that it proposes to reduce the threshold limit value of 2 fibers per cc to 0.5 fibers per cc, and gives as its rationale, and I quote, " The development of this proposal is premised on recent medical and scientific evidence as to increased health hazards associated with occupational exposure to asbestos. Since the promulgation of the U.S. permanent asbestos standard, (that was the 2 fibers per cc) considerable new information has been forthcoming

was, if indeed these workers have been exposed to 2 fibers per cc since 1951, was 2 fibers per cc a valid standard for the protection of the worker? I will have more to say about this in a moment on the basis of a recent visit completed just Friday of last week by a group to Turner Brothers and to the two other units in the United Kingdom that have been studying the Turner Bros. population: Professor Doll at Oxford University, whose group has been responsible for the mortality study of the Turner Bros. population and Dr. Barry who is at the Pneumocomiosis Research Unit in Wales, U.K., a statistician, whose group has been studying the Turner population in terms of morbidity. They have been following them up on terms of in terms of the statistics of the illnesses they have. Dr. Doll and his group has been following them up in terms of their death experience.

The next paper that is listed is one by Drs. Anderson and Selikoff which is still in press and this is the paper that reports the appearance of mesothelioma in family members of asbestos workers - conjugal cases of asbestos. And here again, the assumption was, after having the data for this paper presented, that exposure in the home, would appear at least at superficial observation to be a light exposure. After all, the members of the family were not in the workplace and probably were exposed to asbestos last. And, therefore, maybe the standard should be reviewed in terms of whether it offers protection. I would suggest, however, that once asbestos gets into the home, carried home by the workman, which in itself is a tragedy, it shouldn't happen, it is asbestos that is there virtually permanently -- it gets into the rugs, into the carpets, it gets suspended by movement and actually you are getting a 24 hr./day exposure, relatively speaking, rather than a partial exposure.

to the presence of a form of asbestos in cummingtonite-grunerite ore, and further suggested that all of the other potential lung cancer hazards, documented lung cancer hazards present in the mine, like arsenic, like increased risks that exists in hard rock miners independent of what ore they may be mining. The possibility of radon and daughter were dismissed. And the increase in cancer was attributed to the asbestos and the increase in fibrosis rather than to silica or any other scar producing dust was attributed to the presence of the cummingtonite-grunerite. Our review of the paper gave us very serious concern for two reasons. In fact, if the data were valid and as a correlary the conclusions were valid, indeed we would have to revise and review our entire concept of what represented a safe and protected environment for the workman. We studied this paper in great depth at several meetings with the scientists who produced the papers. While I could go into a long discussion of what was wrong with the paper, I think nothing is more eloquent than my saying that the paper has been rewritten three times. It is now being published as two papers rather than one. The title has been changed, and we have been given an opportunity to rebut it in the proceedings of the New York Academy of Sciences. This is very unusual because, normally, when something gets published in a medical journal, first of all, it is reviewed by the editorial board and, secondly, you don't ask for the opportunity to publish rebuttal. You use letters to the editor to discuss it back and forth. The publication of the conference is just a single shot publication, and we felt that the mischief of this paper was such that, in all fairness, and I'm very pleased to say that it was NIOSH who requested the New York Academy of Sciences to allow

say nothing in terms of modifying their original position, that indeed they wanted follow-up studies on mortality from Dr. Doll and his associates at Oxford. In discussions with Dr. Doll it was felt that approximately 6 months would be necessary to conclude this sutdy when he would be willing to make an important conclusion. And the morbidity study, the one by Dr. Barry and his associates, the British Occupational Hygiene Society again was going to await the completion of that study which they felt would be a minimum of six months, more likely nine to 12 months off into the future.

So we have the situation where the promulgators of the data on which the revised standard is based are unwilling to make firm conclusions that would appear to be implied in the published proposed revision. I would like to suggest now that OSHA, in terms of its continuing surveillance of the occupational environment of all workers, is to be highly commended because indeed new data are being generated at all times. I am concerned over the premature conclusions they have drawn from the published material at least as they included in the proposed regulation. In terms of actual cancer induction, this has been my field for at least some 25 years, I have published over 100 scientific reports in the field of cancer causation, books in the field, and would address myself very briefly to the position of OSHA that there is no evidence to support a no effect level for a cancer producing chemical. Well, all I can say is,again, short of a seminar, I would be glad to answer questions to any detail you wish. I would conclude that, in terms of susceptibility to a cancer producing chemical and the ability to be exposed to a cancer producing chemical for a full life time, whether in laboratory animals or in the occupational and general environment, the literature

SLIDE #1

ASBESTOS RELATED DISEASE

TYPE

1. Asbestosis	(+++)
2. Mesothelioma	(++)
3. Lung Cancer	(++)?
4. GI Cancer	
Stomach	(±)
Colon	
Rectum	
5. Larynx	(-)

SLIDE #2

A - R - D
Status of Health Issue

1. Fiber Type & Size
2. Multiple External and Internal Factors in Cause
3. Relation of A-R-D to one another
4. Dose Response: No effect level

↓

Setting of Standard

SLIDE #3

PROPOSAL

2f/cc ⟶ 0.5f/cc

1. Rationale
2. Evidence
3. Conclusion
4. Response

SLIDE #4

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