

MEDICAL DEPARTMENT

March 2, 1973

ASBESTOS -
Medical Aspects, Records, etc.

Mr. Erich H. Feierabend
Vice President
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You are well acquainted with the Federal Register and the various safety and health standards contained therein. Recently you asked for clarification regarding the medical program for employees exposed to asbestos.

On or before 1-31-73, in the States, every employer is to provide or make available a comprehensive medical examination of his employees who are exposed to airborne concentrations of asbestos fibers. These examinations are to consist first of a preplacement medical examination within 30 days following his first employment in such an occupation. This will not be any problem for us since we already do such examinations before the man is placed at work. This preplacement medical examination also includes a 14x17 posterior anterior chest x-ray, such as we are making. Suitable inquiry on the history is to be made so as to detect any symptoms of respiratory disease. The one thing which we have not been doing thus far is to include the required pulmonary function testing which, according to the law, is to consist of a forced vital capacity (FVC) and a forced expiratory volume at one second (FEV_{1.0}).

According to the law, on or before 1-31-73 and at least annually thereafter, each employer is to provide or otherwise make available a comprehensive medical examination of all his employees who in their customary occupation are exposed to airborne concentrations of asbestos fibers. This examination is to consist of at least a history paying particular attention to respiratory disease, pulmonary function testing as described above, and a posterior anterior 14x17 chest x-ray. They do not actually mention a physical examination but we are in the habit of performing these through our survey medical examinations and I feel that we should certainly continue with the actual physical examination as well.

We are interested in the employees with respect to their total medical health and not just their respiratory symptoms and possible diseases related to this system. Some of the malignancies associated with asbestos may involve other

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lining surfaces of the body as, for example, the peritoneal cavity. It would be short-sighted indeed to restrict one's inquiry only to respiratory symptoms and evidence of respiratory disease. I think we have to be concerned most certainly with pulmonary, cardiovascular and gastro-intestinal problems as such. As of this time, I have instructed Herb Johnson of our mobile unit when he visits any of our plants in the States engaged in asbestos work, to make a 14x17 chest x-ray on each of the employees in the shop who are exposed to airborne concentrations of asbestos fibers.

Also in the law as I am sure you are aware, there is a further statement that the employer shall provide or make available within 30 calendar days of termination of employment of any employee who has been working with or exposed to airborne concentrations of asbestos fibers, a complete medical examination which shall include as a minimum a chest x-ray, history particularly of respiratory disease, and the above mentioned (2) respiratory function tests (FVC and FEV_{1.0}).

No medical examination is said to be required of any employee if adequate records show that he has been examined in accordance with these requirements within the past one year period. We would have to have such records on file and ascertain that they were sufficient to satisfy all requirements. I might add that complete and accurate records are to be maintained by the employers for at least 20 years. Formerly we had kept such records 10 years only following termination from any cause. Henceforth, we will have to increase this time interval to the 20 year span. This 20 year period has been recommended I am sure because of the rather prolonged latent period with respect to the development of asbestosis and neoplasms. I would like to interject another comment regarding record keeping, namely, that exposure records both personnel and environmental monitoring, must be kept at least 3 years. These records, as well as the medical ones, must be made available upon request to OSHA and NIOSH. You are also aware of the fact that employees do have a right to inspect their own medical records, even those pertaining to their in-plant exposures to hazardous substances and agents.

I have been trying since April of last year to obtain on a trial basis, one of the newer pulmonary function testing machines. I kept receiving promises from the 3M Company. In the past few days I was able to receive on a loan basis, a Denti Pulmonary Performance Analyzer made by the Cavitron Corporation, Model PA-70 Digital. We can purchase this machine through our supplier of first aid products, Karel Medical Inc., for \$995.00, plus shipping charges and sales tax where applicable. If desired although I do not believe it will be necessary in our operations, an extra could be included wherein you are able to receive a written read-out of the test. In my opinion, the digital model is quite ample.

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This machine weighs 13 lbs. and its parent and modifications of it have been in existence for 5 years which I think provides it with greater impact on the medical public than some of its competitors that have not been in existence for such a long period of time. This machine is relatively simple to operate. One can do 2 or 3 of the above mentioned tests (FVC and FEV_{1.0}) in a minute and a half per employee.

Having this equipment in the plant itself would seem to be the proper way to handle the situation since one would be able to do the preplacement pulmonary function testing at the onset. Having this done in the hospital, a clinic, or the doctor's office would only involve them away from the job, possible transportation costs, and a higher charge by any outside agent than that which it would cost us with this basic investment and relatively simple training to use the equipment. It would be my recommendation that any of our plants with such exposures purchase such a machine and begin their testing of the employees at this time.

Pulmonary function testing in itself is going to create problems for us with respect to the hiring of individuals and their continuance on the job should they have insufficient or poor responses on the pulmonary function testing. In my opinion it would be difficult for a malingerer to duplicate his malingerer accurately and consistently with this equipment because it is so precise. In using this Pulmonary Performance Analyzer, one can easily obtain an impression of the person's degree of cooperation which the machine can largely confirm.

On page 913 of the Occupational Safety and Health Reporter which was sent by Charles Borcharding not too long ago to each of the Manufacturing Vice Presidents, there is the following:

- "(7) The employer shall establish a respirator program in accordance with the requirements of the latest revision of the American National Standard Practice for Respiratory Protection Z88.2, with the exception that no employee should be assigned to tasks requiring use of respirators if his most recent medical examination indicates: (1) Forced vital capacity less than 70% of predicted value for age, height and sex, or (2) Forced vital capacity less than 80% of predicted value for age, height or sex in addition to at least two of the following criteria.
- (a) X-ray evidence of asbestosis
 - (b) Dyspnea (shortness of breath)
 - (c) Rales
 - (d) Clubbing of fingers "

If your in-plant working conditions do not require a respirator, this will not pose a real problem. If your working practices or lack of adequate engineering requires the use of respirators, then the results of the pulmonary function

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testing come into being immediately, as you can see. Those with an FVC of less than 70% of predicted normal for that person without additional medical findings, or 80% with 2 of the 4 medical criteria referred to above, (a) thru (d), would not even be allowed to work on the job with a respirator. One has to think of the maintenance man sent in to repair equipment which has broken down. That portion of the shop could perhaps then exceed the airborne asbestos fiber concentration wherein a respirator was required, thus making it necessary for a respirator to be worn. If that maintenance man's pulmonary function testing was not adequate, he could not be sent in to do the job. This pulmonary function testing is therefore going to require us to maintain at all times, insofar as it is possible, working conditions where respirators are not required and employees without significant respiratory deficiency.

When it comes to the actual hiring of employees, we will have to inaugurate classes of respiratory impairment. The American Medical Association in 1965 put forth "Guides to Evaluation of Permanent Impairment - The Respiratory System." A copy of Table 11 which had been reprinted by the National Tuberculosis and Respiratory Disease Association is reproduced. I do not believe at this point that we should hire anyone in Class 3 or 4 to work in a plant where he would be exposed to airborne asbestos fibers. I think it would be still more to our advantage to try and hire Class 1 and avoid Class 2 where we might have trouble with them in later years. We certainly do not want to be guilty of aggravating a pre-existing respiratory problem. I will try and do some checking with other physicians and see what their experience and views might be in this regard.

In the current February 1973 issue of Industrial Medicine, there is a very timely reference regarding asbestos which I am enclosing for your benefit. I have attempted to write only concerning the medical aspects, more especially the physical examination with related tests. You will hear separately from Charles Borcharding regarding industrial hygiene and safety aspects.

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Encs.

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* Milt Pogson: If work practices and/or engineering controls are not adequate, you can see that with the pulmonary function testing that if an employee can't even use a respirator to continue on the job, that he would have to be transferred to another job without such hazard of airborne asbestos fibers or sent home. I hope this will not become necessary. It can however create quite