PART III - MEASURES FOR REDUCTION OF THE DUST HAZARD

HOW CAN THE DUST HAZARD BE REDUCED? - The quantity of dust inhaled may be minimized by the employment of these four methods outlined by Dr. M. Kummel in "Medical Record":-

"1. Suppression of Dust Near It's Origin, by the use of exhaust draught, dust traps or water. The water has the advantage of a fly-paper effect on the silica particles, but the humidity created tends to favor infection by prolonging the life of pathogenic organisms outside the body and facilitating their entrance into the body.

"2. Admixture of Adulterant Dust with the silica which may assist in the expulsion of silica from the lungs, retard the process of the disease or prevent the development of tuberculosis. However, the introduction of an additional foreign body into the lungs is of doubtful value fraught with potential danger and should be regarded very cautiously and conservatively.

"3. Proper Ventilation, in connection with other methods.

"4. Masks should be an ideal preventive measure but, unfortunately, most of the masks stopping the dust also stop the respiration, thus necessitating their frequent removal. They should be of an approved type, properly maintained, strictly supervised and their use rigidly enforced."

We do not believe that the use of water would have any outstanding effects on raising the humidity in most of the dust producing operations in the Petroleum Industry, any more than, for example, sprinkling one's lawn would have. We believe it remains to be proved beyond doubt that the humidification of air actually favors bacteriological growth to the extent that the incidence of disease from pathogenic organisms is raised significantly. There has been much discussion on this subject, but little has been proven. Theoretically, it may be admitted that these organisms live longer in a moist atmosphere than in a dry atmosphere, but it is rather hazardous reasoning to conclude that for the reasons stated, the use of wet methods in dust control causes an increase in disease.

Dr. Kummel's statement that most masks (we presume he means respirators) that stop dust also stop respirations, is a little strong. There are available today respirators that adequately remove dust without creating a resistance to breathing in excess of 15 to 30 millimeters of water column, and the tendency of progressive manufacturers of such devices is to further lower the resistance. Men during the war actually did fighting while wearing respiratory protective devices that had as much as 50 to 75 millimeters resistance. The resistance figures given for respirators are measured at a rate of air flow of about three cubic feet a minute which is equivalent to the amount of air breathed by a person doing hard physical work.

Dust Respirators and Air Masks - Respirators and masks of various types have been used since the days of the alchemists and are mentioned by Agricola, Ramazzini and others. Control of the dust hazard by means of respiratory protective equipment is effective, provided:

(1) the protective equipment is efficient, and

(2) it is worn continuously.

Efficient equipment is available, but for continuous use, day after day, this method