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Division of Biology and Medicine

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Dr. Richard W. Niemer, Director
Division of Standards Development
and Technology Transfer
Centers for Disease Control
National Institute for Occupational
Safety and Health
Robert A. Taft Laboratories
4676 Columbia Parkway
Cincinnati, OH 45226-1998

Dear Dr. Niemer:

Thank you for the opportunity to review the draft document "Criteria for a Recommended Standard: Occupational Exposure to Respirable Coal Mine Dust". I have the following comments about the development of CWP and COPD in miners:

1. Transfer of miners with evidence of these diseases to low dust areas: These workers already have substantial lung dust burdens; they should be re-assigned to work in dust-free areas. Future research should attempt to determine whether this intervention will prevent or slow progression of these lung diseases.
2. There is an urgent need to identify earlier biomarkers for PMF and COPD in miners so that affected workers can be removed from a dusty area before lung overload and irreversible lung damage occur. Recent animal models have been developed by David Warheit and Kevin Driscoll; on the basis of these models, increased fibronectin or tumor necrosis factor- α in lung lavage fluid may predict future development of silicosis. It is important to identify biomarkers specific for PMF, silicosis, and COPD because the pathogenesis of these diseases is different. These models may also provide insight about the mechanisms of lung disease resulting from dust overload.

Recent references include:

1. Warheit, D.B., Hansen, J.F., and Hartsky, M.A., Physiological and pathophysiological pulmonary responses to inhaled nuisance-like or fibrogenic dusts. Anat. Rec., 231: 107, 1991.
2. Warheit, D.B., Carakostas, M.D., Hartsky, M.A., and Hansen, J.F., Development of a short-term inhalation bioassay to assess pulmonary toxicity of inhaled particles: comparisons of pulmonary responses to carbonyl iron and silica, Toxicol. Appl. Pharm., 197: 350, 1991.
3. Driscoll, K.E., Maurer, J.K., Lindenschmidt, R.C., Romberger, D., Rennard, S.I., and Crosby, L., Respiratory tract responses to dust: relationships between dust burden, lung injury, alveolar macrophage fibronectin release, and the development of pulmonary fibrosis. Toxicol. Appl. Pharm., 106: 88, 1990.

I look forward to reading the final report.

Sincerely,

A handwritten signature in cursive script that reads "Agnes B. Kane".

Agnes B. Kane, M.D., Ph.D.
Associate Professor