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Statement of

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16. Abstract (Limit: 200 words) This testimony before the Subcommittee on Manpower, Compensation, and Health and Safety concerned the research and technical assistance activities of NIOSH in the area of mine safety and health. Under the Federal Coal Mine Health and Safety Act of 1969, NIOSH, at the Morgantown, West Virginia location, studied the protection of life and health, the detection of respiratory impairment, and the prevention of occupational diseases of coal miners. The institute established additional coal mine health standards and assured the availability of medical examinations for underground coal miners. The Testing and Certification Laboratory has evaluated and approved respirators, coal mine dust personal sampler units, and gas detector tubes. NIOSH has developed recommended standards for some of the most important health hazards facing workers in metal and nonmetallic mines including noise, asbestos (1332214), silica (7631869), beryllium (7440417), inorganic arsenic (7440382), inorganic mercury (7439976), carbon-monoxide (630080), and nitrogen oxides. Cooperative work with other agencies was described. Studies involving uranium (7440611), asbestos, potash, and copper (7440508) industries were noted. Concern was also expressed over exposure to diesel exhaust. Observations concerning a rational approach to the scientific and regulatory problems of Federal occupational and environmental health programs were included.				
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Mr. Chairman and Members of the Subcommittee:

I am Dr. John F. Finklea, Director of the National Institute for Occupational Safety and Health (NIOSH), administered by the Center for Disease Control within the Department of Health, Education, and Welfare. I am accompanied by Dr. James A. Merchant, Director of the NIOSH Appalachian Laboratory for Occupational Respiratory Diseases (ALFORD) and Mr. William L. Wagner, Coordinator for Energy and Mining Research with our Western Area Occupational Health Laboratory (WAOHL). We appreciate the opportunity to discuss our research and technical assistance activities in the area of mine safety and health.

The health research that our Institute conducts under the Federal Coal Mine Health and Safety Act of 1969 is well known to this Subcommittee. At Morgantown, West Virginia, our research program is directed towards protection of life and health, detection of respiratory impairment, and prevention of occupational diseases of coal miners. Our Institute also establishes additional coal mine health standards and assures the availability of medical examinations for underground coal miners. NIOSH works cooperatively with the Mining Enforcement and Safety Administration (MESA) to test and approve devices used in the control and evaluation of occupational hazards in coal mines. Under this program, our Testing and Certification Laboratory has evaluated and approved respirators, coal mine dust personal sampler units, and gas detector tubes.

A broad research capability has been developed in Morgantown in pathology, physiology, chemical evaluation, biochemistry, immunology, and infectious diseases. This program, which was previously directed solely toward diseases of coal miners, is now moving into research on

other occupational respiratory diseases, including those involving cotton dust, grain dust, and asbestos.

NIOSH has no legislated responsibility under the Federal Metal and Nonmetallic Mine Safety Act. However, under the Occupational Safety and Health Act, our Institute has developed recommended standards for some of the most important health hazards facing workers in metal and non-metallic mines, including noise, asbestos, silica, beryllium, inorganic arsenic, inorganic mercury, carbon monoxide and nitrogen oxides. Although our legislative mandate does not specifically extend to the mining and milling operations involved in the extraction of these minerals, the study of miner populations can be important in the development of occupational health standards for other groups of workers.

In conducting field investigations we have also become involved with health problems in metal and nonmetallic mines. When we respond to a request for a health hazard evaluation of a smelter or conduct industrywide studies involving metal fumes, we do not have authority to investigate the associated mining and milling operations, although the entire workplace may be owned by one company, organized by one union, and contain employees exposed to the same substances. The Department of the Interior has enforcement and research authority in the mine and mill, and the Department of Labor has enforcement authority for the smelter. In these situations, we attempt to work cooperatively with the other agencies involved, since the health problems of the workers supersede the jurisdictional boundaries.

NIOSH had a formal Memorandum of Understanding with the Department of the Interior from 1961 to 1971. Since 1971, our cooperative research has been conducted through individual interagency agreements for each project.

Currently a new Memorandum of Understanding is being negotiated between NIOSH and MESA to provide an umbrella under which the two agencies will coordinate a number of research projects.

Over the years NIOSH and its predecessor organizations have conducted considerable health research into the mining, milling, concentrating, and processing of metal and nonmetal minerals. These studies involved uranium, asbestos, potash, and copper industries. Between 1950 and 1975 the Public Health Service collected data on about 20,000 uranium miners and mill workers. These data, which include results of medical examinations, medical and occupational histories, and radon daughter exposures, probably represent the most extensive collection of information available on radiation exposure to the respiratory tract. Analysis of this information has revealed a relationship between lung cancer and exposure to radon daughters in uranium mines. This research has also resulted in development of field methods for measuring radon daughters, procedures for engineering controls, and medical tests for diagnosing lung cancer.

NIOSH is continuing to conduct research on uranium workers during the current fiscal year at our Salt Lake City laboratory. One project is to analyze death certificates of uranium mill workers to compare their mortality experience with that of the general population. With the National Cancer Institute, NIOSH is relating cellular changes in sputum samples from uranium miners with age, smoking history, radiation exposure, and any later evidence of lung cancer. This analysis should aid in developing sputum cytology as a method for early detection of lung cancer.

We are concerned about diesel exhaust because of the increasing use of diesel engines underground. Experimental studies conducted by the

National Institute of Environmental Health Sciences (NIEHS) and the Energy Research and Development Administration (ERDA) indicate that laboratory animals develop evidence of lung disease at relatively low levels of exposure to diesel exhaust. To obtain further information on worker exposure, we are conducting jointly with MESA and the Bureau of Mines a 3-year study of the health effects of exposures to dust and diesel exhausts found in non-coal underground mines. The study will attempt to determine whether present levels of dust, gases, or diesel exhaust produce disease or shorten the life of miners. Approximately 7,000 miners from 22 mines will be examined by NIOSH, while MESA and the Bureau of Mines will conduct environmental measurements and analysis. Current dust levels and evidence of pulmonary disease will be compared with data previously collected during a similar study in 1958-1961. This information will be useful to NIOSH in developing and reviewing criteria documents and to the Department of the Interior in their research and enforcement responsibilities.

Recognition, evaluation, and control of substances suspected of causing cancer is given high priority in the NIOSH research program. Carcinogens to which miners and mill workers are exposed include asbestos, arsenic, uranium, and beryllium. We are conducting mortality and morbidity studies of asbestos miners to determine whether exposure to concentrations of asbestos fibers below the NIOSH recommended standard of 2.0 fibers/cc can be related to increased malignant and non-malignant respiratory disease. In addition, the National Institute of Environmental Health Sciences supports and conducts much of the basic research into these and other substances and coordinates their research closely with ours.

The NIOSH energy research program also involves metal and non-metallic mines. Among the research projects on occupational hazards associated with energy is a mortality and morbidity study of former oil shale workers to evaluate the health problems involved in oil shale extraction. In our energy program we are also developing gas and vapor monitors, a portable microwave spectrometer, and a fibrous aerosol monitor that will be useful in evaluating mine exposures as well as other workplace environments. These are a few examples of current research conducted by our Institute that involve workers covered by the Federal Metal and Nonmetallic Mine Safety Act.

I would also like to make some observations about a rational approach to the scientific and regulatory problems of Federal occupational and environmental health programs. These comments will be based on the experience of our Institute under the Coal Mine Health and Safety Act and the Occupational Safety and Health Act and on my own experience as a physician serving for five and one-half years in the Federal air pollution research program.

The goal of assuring safe and healthful workplaces is broader than the mission of any single Federal agency and any single piece of legislation. Our experience in conducting research on hazards that cross jurisdictional boundaries points out the need for a coordinated Federal occupational safety and health research program to support regulatory programs. The NIOSH experience also reinforces my own belief that the scientific appraisal of occupational safety and health problems should be distinct from regulatory decision making. The research program should be based upon scientific considerations and should not be unduly and prematurely influenced by regulatory

considerations. In my opinion, a separate Federal research institute supporting regulatory activity is a good organizational model. This arrangement best protects scientific credibility, provides for accountability, and furthers the goal of establishing safe and healthful workplaces.

Mr. Chairman, I would be pleased to try to answer any questions you or Members of the Subcommittee may have.