MINUTES

MINE SAFETY AND HEALTH RESEARCH ADVISORY COMMITTEE (MSHRAC) MEETING
APRIL 9-10, 2014, 8:30 AM
DOUBLETREE BY HILTON
8402 UNIVERSITY BOULEVARD
MOON TOWNSHIP, PA 15108

COMMITTEE MEMBERS & ATTENDEES PRESENT

Dr. Cecile Rose, Associate Professor, Department of Medicine, University of Colorado, Chair of MSHRAC, called the meeting to order. The following members were present:

Mr. Brent Chamberlain, Consultant, Scorpio Gold Corp.
Mr. Dennis O'Dell, Administrator for Occupational Health and Safety, United Mine Workers of America
Dr. Jeffery Kravitz, Chief, Scientific Development, Mine Emergency Operations, Mine Safety and Health Administration
Mr. Emmett Russell, Director, Department of Safety and Health (Retired), International Union of Operating Engineers
Dr. Jeffery L. Kohler, NIOSH, Executive Secretary to MSHRAC
Dr. Samuel Frimpong, Professor and Chair, Mining and Nuclear Engineering, Missouri Science and Technology
Mr. Kelly F. Bailey, Director, Safety, Health and Environmental Services, Vulcan Materials Co.
Dr. Richard J. Fragaszy, Program Director, Division of Civil, Mechanical and Manufacturing Innovation, National Science Foundation
Dr. Derek Elsworth, Professor, Department of Energy and Mineral Engineering, Pennsylvania State University
Mr. Michael Wright, Director of Health, Safety, and Environment, United Steelworkers of America (Mr. Wright joined the meeting starting with the afternoon session on April 9)

The following attendees were also present:

Adam Smith, NIOSH, Pittsburgh, PA
Alex Gaygin, Draeger, Pittsburgh, PA
Cara Halldin, NIOSH, Morgantown, WV
Chris Greissing, IMA-NA, Washington, D.C.
Chuck Gowans, CSE, Monroeville, PA
Dana Willmer, NIOSH, Pittsburgh, PA
Dave Yantek, NIOSH, Pittsburgh, PA
Donald Doerr, LabTech, BCS Life Support, Merritt Island, F
Drew Potts, NIOSH, Pittsburgh, PA
Ed Green, Crowell & Moring LLC, Washington, DC
Eileen Storey, NIOSH, Morgantown, WV
Elizabeth Hofer, NIOSH, Atlanta, GA
Eranda Perera, NIOSH, Pittsburgh, PA
Eric Weiss, NIOSH, Pittsburgh, PA
Gerald Finfinger, Pittsburgh, PA
Jacob Carr, NIOSH, Pittsburgh, PA
Jeff Welsh, NIOSH, Pittsburgh, PA
Jeff Whyatt, NIOSH, Spokane, WA

Jim Dean, WVU, Morgantown, WV
Jim Sharpe, Sharpe Media, LLC, Arlington, VA
John Burr, Pittsburgh, PA
Justin Patts, NIOSH, Pittsburgh, PA
Jack Trackemas, NIOSH, Pittsburgh, PA
Kelley Durst, NIOSH, Atlanta, GA
Marie Chovanec, NIOSH, Pittsburgh, PA
Maryann D'Alessandro, NIOSH, Pittsburgh, PA
Michael J. Sapko, Pittsburgh, PA
Mike Parris, Walter Energy, Birmingham, AL
R.J. Matetic, NIOSH, Pittsburgh, PA
Richard Wood, IUOE, Beaver, WV
Rohan Fernando, NIOSH, Pittsburgh, PA
Samuel Janisko, NIOSH, Pittsburgh, PA
Scott Laney, NIOSH, Morgantown, WV
Steven Mischler, NIOSH, Pittsburgh, PA
Susan Moore, NIOSH, Pittsburgh, PA

Dr. Kohler explained that MSHRAC members participating in the meeting must be free from conflicts of interest. He asked members to declare conflicts of interest each day prior to the start of the meeting. There were no conflicts from members reported.

Dr. Rose read the minutes from the last meeting and D. Elsworth moved to approve the minutes as written. J. Kravitz seconded the motion, and it was passed unanimously.

DR. JEFFERY L. KOHLER, REPORT FROM THE ASSOCIATE DIRECTOR FOR MINING SAFETY AND HEALTH, NIOSH

Dr. Kohler welcomed the members and provided an overview of both the meeting agenda and the goals for the Committee. After an overview presentation on the overall state of the Office of Mine Safety and Health Research, that included staffing, budget, extramural research, and the challenges faced by the program, there was detailed discussion on each of the topics.

The Committee was asked to provide feedback on the relevance and impact of: reducing coal mine dust exposures through new control technologies, oxygen Supply, solutions to the rock dust caking problem, health and safety management systems, and metal mine ground control. The Committee was also asked for feedback on the relevance, impact, and approach of 3 new project start-ups: source control of float dust, improving self-escape, and the refuge chamber demonstration task.

The Committee was asked to review and score recommendations #2,3,5,8,11, and 15 of the OMSHR-developed and MSHRAC-approved Implementation Plan to address the National Academy of Sciences recommendations. This effort will be covered in greater detail during a presentation by the NIOSH Office of Program Planning.

It was noted that currently there is not a coal industry representative on the Committee. HHS replaced the coal representative with a new member that is a representative of academia. Although, we have been assured that there will be a new coal industry representative on the next MSHRAC Committee, the current Committee feels that action is needed to make sure HHS is aware of the importance of having a balanced representation and will be sending a letter to the HHS Secretary identifying their concerns about this issue and other areas of concern.

There was a motion made, and seconded, to draft a letter to the HHS Secretary about the current structure of the Committee. The motion was passed unanimously.

S. Frimpong moved to amend the earlier motion to include staffing concerns and the replacement of the Lake Lynn Lab concerns in the letter to the HHS Secretary. D. Elsworth seconded the motion, and it was passed unanimously.

MR. DREW POTTS, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Mr. Potts gave a presentation on a research imperative to reduce coal dust exposures. He talked about a three prong strategy developed and initiated in 2008 by the Dust, Ventilation and Toxic Substances Branch of OMSHR to enable mines to comply with an MSHA proposed reduction in the coal mine dust standard from 2 to 1 mg/m3. The three prongs of the strategy include increased worker empowerment through the promotion of the Personal Dust Monitor (PDM), a heightened education and technology transfer program as well as the execution of a research and development plan to innovate, evaluate or refine dust control technology to further reduce occupational exposures. Targeted occupations for control technology include the roof bolting machine operator, continuous miner operator, shearer operator, longwall return jacksetter and surface blasthole drill operator. Information was presented concerning the development, testing and certification of a PDM device without a cap lamp. The education and technology transfer activities included three publications in the last six months, covering optimized operator cab design, use of redirected scrubber airflow to control dust rollback from the continuous mining machine, and the effects of scrubber operation on continuous mining dust levels. Mr. Potts also reviewed OMSHR's current continuous mining dust control research areas, including a canopy air curtain used to supply a filtered stream of air into the bolter operators breathing zone, evaluation of a standalone dust collector used to create a filtered split of air for miners working downwind of coal cutting and identification of practices for improved dust control when cutting crosscut entries. Current longwall mining dust control research areas reviewed included: shield-mounted water sprays to control dust generated by coal spalling, use of foam to reduce dust generated during the movement of shields, a shearer-mounted tailgate spray manifold used to maintain a fresh split of air in the walkway and a shearer-mounted scrubber.

MR. DON DOERR, LABTECH, BCS LIFE SUPPORT

Mr. Don Doerr, Liquid Air Breathing Technology/BCS Life Support/NASA presented a NIOSH-OMSHR effort with NASA on Cryogenic Systems for Mine Safety. The work is being completed under an Interagency Agreement with NASA with work being accomplished by the author and a BCS contractor team working with NASA and OMSHR. Early comments defined cryogenic air (liquid air) as a very dense (53 lb/ft3) liquid that is maintained at -318° F under typically very low pressures, even ambient. Since it is very cold, it is stored in thermos bottle type cylinders known as Dewars that are much lighter than compressed air cylinders owing to storage pressures less than 100 psi.

The presentation then addressed five different projects that are underway with NASA to develop prototype products to support the safety of miners. First was Cryogenic Breathing Apparatus (CryoBA) which is a 2 hour positive pressure, demand, self-contained breathing apparatus (SCBA) designed for mine egress. Miners can exit the working face using their SCSR's (self-contained self-rescuers), proceed to the CryoBA cache, don and simultaneously fill and breathe before proceeding to the next re-filling station approximately 1 hour 30 minutes away. Consequently, the second prototype is the Cryogenic Air Storage and Fill Station (CryoASFS) which can simultaneously fill 4 (prototype) apparatus up to ten times each. A final type of breathing apparatus represents the third concept and is called the Advanced Cryogenic Breathing Apparatus (ACryoBA). This resembles the CryoBA with the addition of a miniature cryocooler which will maintain the cold liquid air indefinitely so long as electric power is available during the storage time.

The fourth prototype described was the Cryogenic Refuge Alternative Supply System (CryoRASS) which is uniquely capable of supplying breathing air (not just the oxygen supplement), providing significant cooling as evidenced by data from a 96 hour test in a refuge where typically circulated air was cooled 16° F while passing through the air handler, and finally, the removal of significant water vapor. This represents a successful demonstration of an actual mining heat stress countermeasure. Interestingly, the volume (space) and weight requirements are much less owing to the safe (< 100 psi) and efficient storage of air in liquid form.

The final prototype was the Liquid Oxygen Kit (LOXK), a modification to a next generation 4 hour mine rescue closed-circuit breathing apparatus (CCBA) designed in conjunction with the navy under a separate IAA. This project seeks to replace the high pressure (3000 psi) gaseous oxygen cylinder with a 0.5 liter liquid oxygen Dewar (<100 psi).

In summary, this work on cryogenic alternatives to high pressure gaseous breathing gases represents a step in the advancement of the state-of-the-art for life support apparatus for miner safety. Feasibility has been demonstrated already in the first three projects, namely the CryoBA, the CryoASFS and the CryoRASS and work is proceeding steadily to demonstrate the feasibility of the AcryoBA and LOXK.

DR. JOHN HOWARD, REPORT FROM THE DIRECTOR, NIOSH

Dr. Howard stated that at the last meeting he had talked about a management review of the mining program. The Institute is trying to conduct a 360 degree review of the mining program. CDC chartered an independent management review in the Fall of 2013. This review involved the Spokane location. NIOSH received the report from the review and shared it with the Spokane employees. The reviewer traveled to Spokane and talked with all of the employees. Dr. Howard talked about the value of occasionally defining and clarifying missions and the review of the Spokane location is intended to help clarify program missions for the mining sector. There were 4 recommendations provided by the independent review and all 4 were implemented. The recommendations are:

1. The mission of the Spokane lab needed to be better clarified.
2. Dr. Howard asked the MSHRAC members to offer their views on the western mining focus and to describe any unique features of mining geography that might apply to the Spokane lab.
3. Reconsider the organization function.
4. NIOSH has added a 3rd mining division located in Spokane. The Spokane Mining Research Division (SMRD) was created. Jeff Whyatt is the acting director. David Weissman will head up the search committee for a permanent director. Diane Porter will handle the reorganization paperwork for the Spokane division.
5. Examine grade levels in Spokane relative to the mining program and NIOSH.
6. Diane Porter, Dave Baden, Jeff Kohler, and Jeff Whyatt will be conducting this part of the review.
7. Add additional staff to the Spokane lab.
8. NIOSH will be adding 9 FTE positions in Spokane this year. Seven would replace retirees, and there will be 2 new hires in the Total Worker Health (TWH) program.

Dr. Howard stated that he will support any assistance needed for the hiring issues in Pittsburgh and Spokane. He suggested that a solution might be to hire general engineers and cross-train them with mining engineers. He also thought that attracting junior mining engineers though the summer intern program might help. He stated that he can't solve the CDC hiring issues but he felt that the Spokane political issue might be helpful. He stated that NIOSH has been fortunate to hire Dave Baden to head up the administrative function and Denzil Slaughter to head up the facility areas of NIOSH.

He said that NIOSH is fortunate to have the 2 mining labs but the distance between the two is an issue. He stated that Jeff Kohler will oversee all 3 of the mining divisions and that the 3 division directors will report to

Jeff. The TWH program in Spokane is part of the Division of Respiratory Disease Studies. There is a possibility that the TWH program in Spokane might join the new SMRD. He stated that the full program-centric approach which has been in place since 2009 has been modified due to a learned experience.

MR. MICHAEL SAPKO AND MR. ERIC WEISS, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Rock dust is the primary defense for preventing coal dust explosion propagation in U.S. underground coal mines. Mike Sapko provided an overview of OMSHR's research relevant to dry, wet, and foamed rock dust application processes. For rock dust to be effective at the required 80% incombustible inerting level, once wetted and dried, the rock dust must be dispersible into separate particles of sufficient fineness. Mr. Sapko also discussed OMSHR's ongoing research focused on developing and identifying anti-caking additives and the development of performance test methods for compliance with the 30 CFR75.2 rock dust definition.

Mr. Sapko provided information on various rock dust findings from past research including rock dust dispersibility and its distribution in a mine entry. Rock dust must be dispersible in sufficient quantities to effectively inert a propagating coal dust explosion and no amount of rock dust on the floor can compensate for explosible accumulations of fine coal dust on the roof and ribs (walls). Rock dust particles greater than 75 µm (microns) in size are not effective in preventing coal dust explosions. Discussions continued on NIOSH's Hazard ID - Non-Conforming Rock Dust regarding the wide variations found in particle size distributions of the current rock dust supply used in underground coal mines. The overarching concern following the issuance of the Hazard ID was to bring rock dust into compliance with the important anti-caking requirement and to develop new performance test methods for characterizing rock dust dispersibility and determining the minimum effective surface area sufficient for inerting at the 80% incombustible level.

Mr. Sapko highlighted results from a round robin study conducted among members of the Industrial Minerals Association of North America; the National Stone, Sand, and Gravel Association; the National Lime Association; OMSHR; and independent testing laboratories using various laser diffraction systems. The study focused on identifying an acceptable methodology of using commercially available laser diffraction particle size analyzers to determine the minimum rock dust surface area (cm^2/g) needed for effective inerting. OMSHR's researchers, through 20-L explosion inerting studies, determined the relationship between the mass of rock dust to inert coal dust as a function of the rock dust surface area. For rock dust surface areas less than ~2500 cm^2/g, the amount of rock dust to inert coal dust increases exponentially with decreasing rock dust surface area.

Mr. Sapko also discussed current limitations in OMSHR's capabilities, due to the loss of the unique Lake Lynn Experimental Mine, to answer important performance questions regarding the end use of foamed rock dust technology. Laboratory testing was unable to mimic the dynamic forces that break foamed rock dust clusters into the smaller particles needed to cool the flame. Nor was laboratory testing able to determine the residence time of dislodged foamed rock dust within the advancing flame front, which greatly affects the quenching potential. Full-scale explosion performance data are necessary for comparing inerting performance of the foamed rock dust to the established performance of dry dispersible rock dust. Since dry dispersible rock dust is the primary approved defense against coal dust explosions, full-scale performance data are needed for regulatory authorities to make informed decisions regarding accepting through policy or approving foamed rock dust technology, without a diminution in safety, as an alternative to conventional approach of dispersing of dry rock dust.

DR. JEFFREY WHYATT, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Dr. Whyatt reviewed progress on the project "Ground Control Safety in Deep Vein Mines" conducted in collaboration with an operating deep vein mine. Such mines typically encounter mining induced seismicity

associated with slip of faults as they pursue rich but thin veins of ore deep into the earth. This mining induced seismicity is a significant hazard, accounting for many of the most severe accidents in these mines. Progress was described in two areas: dynamic support laboratory testing and monitoring of a fault stress shadowing experiment. A large-scale frame for testing full-scale panels of mesh and shotcrete has been constructed and an initial series of tests have been completed. These panels are used to prevent expulsion of rock between rockbursts by seismic loading. The stress shadow experiment involves excavating a slot to manipulate the stress regime on a fault and limit the size of seismic events that could be generated by fault slip. The slot has now reached four 12 foot "cuts" in height and ground response is in line with expectations. This innovative approach may significantly reduce the potential for rock burst accidents associated with fault slip.

DR. DANA WILLMER, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Dr. Willmer provided an overview of NIOSH's research on occupational health and safety management systems in the U.S. mining industry. With increased frequency, organizations worldwide have integrated occupational health and safety management systems (HSMS) into their broader systems of organizational management. As Dr. Willmer noted the use of a management systems approach for mining health and safety has become a priority topic of interest for mining regulators, mining companies and industry representatives. Dr. Willmer described NIOSH's exploratory study to identify how mining companies are strategically defining the essential HSMS elements and practices and then how those HSMS practices are being implemented at mine operations. She presented preliminary data on initial trends of the most essential HSMS elements and the practices that are considered most important in executing an HSMS at an operating mine. Dr. Willmer discussed how this research intends to produce empirical guidance to assist in resource allocation and decision making in 2015. This guidance will be designed for mine level leadership to help them know where to focus and prioritize efforts on implementing or checking progress on an HSMS and what those HSMS practices look like and how they can be measured for effectiveness. Dr. Willmer also presented findings from research examining how an HSMS approach can be aligned with the current regulatory framework in the mining industry. She included findings from a longitudinal assessment studying, within a HSMS framework, whether citations can be used to prevent future incidents. Those findings are available in print through the peer review journal Risk Analysis.

MS. AMIA DOWNES, OFFICE OF PROGRAM PLANNING, NIOSH

Ms. Amia Downes charged MSHRAC with the task of reviewing and scoring OMSHR's progress in implementing the recommendations provided to them by their National Academies (NA) review committee. She provided an overview of the evaluation efforts the NA completed for NIOSH's Mining Program in 2008, and the implementation plan OMSHR developed and MSHRAC approved that responded to the NA's 18 recommendations. She also reviewed the 2012 MSHRAC assessment that reviewed progress made on six of OMSHR's recommendations, and today they were charged with assessing six more recommendations. Ms. Downes reviewed the scoring criteria and review process, answered any Committee Member's questions, and introduced Dr. Kohler to present OMSHR's progress in implementing these recommendations.

MR. SAMUEL JANISKO, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Mr. Sam Janisko presented an overview of a recently initiated project at NIOSH OMSHR that is focused on developing and evaluating control technologies to capture hazardous "float" coal dust at or near dust sources in underground coal mines. Mr. Janisko explained how this float coal dust fuels mine-wide explosions and how such research and development can prevent future explosions from occurring by providing the underground mining industry with solutions that can remove this dust from the mine atmosphere. Mr. Janisko described how the historic focus in explosion prevention has been placed on the application of "rock dust", or inert limestone dust, onto underground surfaces in order to mitigate mine-wide explosions once an ignition of methane gas has occurred. Mr. Janisko explained how this new research effort will draw on knowledge obtained in black lung

prevention research to identify and apply appropriate dust control strategies to the specific issue of float dust control. He explained how float dust research is unique from respirable dust control research and how the wider size range of hazardous float coal dust in relation to respirable coal dust presents unique issues and opportunities in the area of measurement and control. Mr. Janisko also described an on-going field study that is evaluating the installation of a standalone wet-scrubber for float dust control in a continuous miner return at an operating coal mine. He presented initial data from these tests and discussed the methods that will be used to assess changes in float dust levels due to the introduction of this control technology. He explained how rock dust can interfere with float coal dust measurements and described ongoing tests that have been conducted at OMSHR to evaluate laboratory techniques to correct for this interference. He also presented a novel dust sampling apparatus that is being developed under the project which will enable thermal gravimetric correction for rock dust to be used in future float dust control research. Mr. Janisko also discussed the future plans for the project in the areas of control development and assessment.

DR. SUSAN MOORE, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Dr. Moore briefly reviewed the charge, process, and conclusions from a recent, OMSHR-funded study by the National Academies of Science related to improving self-escape from underground mines. Dr. Moore then presented a general approach for how OMSHR researchers intend to address several of the specific recommendations made by this committee. The objective of the study described was to improve miners' abilities to successfully self-escape by: 1) defining and assessing the knowledge, skills, abilities and other tools necessary; 2) creating a recommended curriculum for mastery that builds upon existing training practices; and 3) developing a distribution methods for elf-escape training materials. The overall approach to meeting this objective was one that was adopted from the Department of Defense, Instructional Systems Development/Systems Approach to Training. Dr. Moore generally described a variety of methodologies that would be used such as ergonomics and cognitive job task analyses, development of competency profiles, adaptation of existing assessment tools being used in other high-risk industry setting for use in mining, and an online repository for distributing training materials to industry professionals. Dr. Moore also provided a brief review of major challenges that will be faced throughout this research including the need to comply with the Paperwork Reduction Act and the need monitor/control the quality of training materials captured by the online repository for broad distribution.

MR. DAVID YANTEK, OFFICE OF MINE SAFETY AND HEALTH RESEARCH, NIOSH

Mr. Yantek presented an overview of a new project aimed at demonstrating how to develop occupancy derating tables for mobile refuge alternatives (RAs) as a function of mine ambient temperature. The proposed method will use a combination of computer simulations and physical testing. Mr. Yantek provided a brief summary of the heat and humidity issues with mobile RAs and NIOSH OMSHR's findings from their research conducted from 2007 through 2013. For the new project, which will be carried out over approximately 15 months, NIOSH OMSHR plans to conduct in-mine testing of a production mobile, tent-type RA in their on-site research mine. Heat and humidity tests will be conducted using NIOSH OMSHR simulated miners to supply the metabolic heat of real miners and additional heaters will be used to supply heat to represent that of the carbon dioxide scrubbing system. A series of tests will be conducted with several numbers of simulated miners and multiple mine ambient temperatures. The RA and the mine will be thoroughly instrumented to measure temperatures, relative humidity, and airflow. In conjunction with this physical testing, a thermal simulation model of the tested RA will be developed and validated using the measured test data. This validated thermal simulation model will then be used to develop occupancy derating tables for the tested RA across a range of mine ambient temperatures from 55°F through 75°F in 5°F increments. Finally, NIOSH OMSHR plans to collect mine ambient temperature and mine strata data from operating coal mines across the United States and then to use these data with the thermal simulation model to examine how the maximum occupancy of the tested RA would vary with mine conditions.

DR. MARYANN D'ALESSANDRO, NATIONAL PERSONAL PROTECTIVE TECHNOLOGY LABORATORY, NIOSH

Dr. Maryann D'Alessandro provided an overview of NIOSH National Personal Protective Technology Laboratory (NPPTL) activities that support mining occupational safety and health. She provided an update on the respirator certification activity where she described the closed-circuit escape-respirator regulation that became effective in April 2014. She described some of the differences in evaluating applications for approval including incorporating tests on the simulator and additional environmental conditioning requirements not part of the previous standard. To date no products have been submitted for approval as CAP III (similar to 60 minute SCSR units) devices, and manufacturers may sell products under the previous standard only until April 2015. There have been several CAP I applications, but no approvals to date. Maryann solicited MSHRAC's input regarding what actions should be taken to ensure that miners continue to have respirators available after April 2015 when manufacturers can no longer sell products approved under the previous standard. She indicated that NIOSH intends to prioritize applications submitted for the CCER approval.

Maryann also provided an overview of the NIOSH NPPTL post market surveillance activity on the self-contained self-rescuer (SCSR) respirators used for escape in the mining environment which is known as the Long Term Field Evaluation Program (LFTE). She described some new approaches NIOSH is exploring to collecting products to evaluate and disseminating the findings after evaluation. To facilitate reporting, NIOSH/NPPTL is developing a standardized reporting format for the mines and manufacturers to expedite the approval process. The current NIOSH LTFE respirator collection activity is a labor and time intensive process. NIOSH/NPPTL assigns one employee full-time who travels to mines throughout the country to collect and replace the respirators prior to returning to Pittsburgh to test the units collected. Since MSHA requires mines to assess 1% of their units annually, NIOSH is exploring opportunities to leverage this MSHA requirement to facilitate respirator collection and evaluation for the LTFE.

Finally, she described some alternate approaches NIOSH is exploring relative to information dissemination and asked the following questions to MSHRAC relative to these new approaches:

- What additional strategies should be considered for LTFE report generation?
- What additional LTFE dissemination efforts should be conducted to reach miners?
- How could the MSHA 1% assessment data be incorporated in the future post market evaluation activities, including NIOSH LTFE project?
- What data obtained under the LTFE program is most important to communicate to:
    - the miners?
    - the manufacturers?
    - the mining companies?

DR. EILEEN STOREY, DIVISION OF RESPIRATORY DISEASE STUDIES, NIOSH

Eileen Storey, MD, MPH, Surveillance Branch Chief in the Division of Respiratory Disease Studies, NIOSH, presented an update on DRDS activities pertaining to Miners' Health. A recent initiative focuses on the health of Metal Nonmetal miners with goals to assess the health status of this sector, improve health using a Total Worker Health approach, and provide information that can inform research on engineering controls and other preventive measures. The team recently reviewed the literature and national data systems to document the current state of knowledge about the health of this sector. A mobile van has been designed and built to provide examinations for miners. The team seeks to engage mining companies, mine operators, union representatives, miners and mining communities to understand the health concerns and priorities in this industry. Dr. Storey also described the progress in transitioning the use of radiography to identify dust-induced lung diseases from analog to digital systems. A repository for images is now accepting digital images from around the world to

provide material for training, testing, and research in the classification of chest radiographs for the assessment of pneumoconiosis.

FINDINGS AND RECOMMENDATIONS BY MSHRAC MEMBERS

There was general discussion of the issues among the members following each of the presentations. Specific findings, recommendations, comments, and requests include:

Dr. Kohler stated that any input from the Committee on small mines would be greatly appreciated.

Mike Wright asked why it takes so long for new technologies to be approved for underground use and is this something that the Committee can try to resolve. It was decided that the Committee can't address this issue as it is an MSHA Approval and Certification issue. A possible suggestion is for NIOSH/MSHA/Labor/Industry to hold a special meeting to discuss this issue.

MSHRAC ACTION ITEMS:

The final NAS Implementation recommendation scoring document needs to be sent to Dr.John Howard by May 30, 2014. In May, Dr. Rose will send the final scoring document to the Committee for review and comment before sending it on to Dr. Howard.

The date for the next meeting will be March or April 2015.

Future potential agenda items:

- DRDS Update
- NPPTL Update
- Nanoparticles/ diesel work
- Hearing conservation effectiveness
- Health Issues:
  - Silica Exposures
  - Ergonomics – Friendly Equipment
  - Hearing Loss Prevention
  - Chemical Hazards
- Health and Safety Management Systems Update
- Refuge Alternatives or Hardened Rooms
- MSD's Programmatic Update

The meeting was adjourned.

I hereby confirm these Summary Minutes are accurate to the best of my knowledge.

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Cecile S. Rose, Chair

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Date