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PROMISES OR PROGRESS: THE MINER ACT ONE YEAR LATER

HEARING

BEFORE THE

SUBCOMMITTEE ON EMPLOYMENT AND WORKPLACE SAFETY

OF THE

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

ON

EXAMINING THE PROGRESS OF THE MINE IMPROVEMENT AND NEW EMERGENCY RESPONSE ACT

MAY 22, 2007

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PROMISES OR PROGRESS: THE MINER ACT ONE YEAR LATER

TUESDAY, MAY 22, 2007

U.S. SENATE,
SUBCOMMITTEE ON EMPLOYMENT AND WORKPLACE SAFETY,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:01 a.m. in Room SD–628, Dirksen Senate Office Building. Hon. Patty Murray, chairman of the subcommittee, presiding.

Present: Senators Murray, Brown, and Isakson.

Also Present: Senator Rockefeller IV.

OPENING STATEMENT OF SENATOR MURRAY

Senator MURRAY. This subcommittee will come to order. I want to welcome our witnesses and all of our guests today.

As a country, we have a responsibility to protect the health and safety of Americans on the job. Last year, after the horrible mine accidents in West Virginia, Congress stepped forward and passed the MINER Act—the most comprehensive mine safety reforms in a generation.

I was pleased to work on that bill with Senators Kennedy, Byrd, Rockefeller, Enzi, and Isakson. We held hearings, we heard from the experts, and we created a comprehensive system to address glaring holes in the safety net that miners rely on.

The MINER Act mandates comprehensive emergency response plans, evacuation plans, post-accident communications, breathing air, training and coordination with local emergency responders. The MINER Act also requires flame-resistant lifelines, state-of-the-art two-way wireless communications, electronic tracking systems, more training for miners and safety inspectors, and higher penalties for safety violations.

Since our law was signed, it has been up to the Bush administration, and specifically the Mine Safety and Health Administration to aggressively implement the law. Things didn't get off to a promising start—instead of nominating a safety leader to run MSHA, the Bush administration chose a status quo mining official. In the weeks before we passed the MINER Act, Richard E. Stickler told me that he could not name a single reform that was needed. Congress and the rest of the country saw things differently.

I voted against Mr. Stickler's confirmation, because his background and his answers didn't demonstrate to me that he recog-

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nized the urgent need to fully and aggressively implement the MINER Act.

Today, as we approach the first anniversary of the passage of the MINER Act, this subcommittee is doing its job of oversight. The question is, is MSHA doing its job to protect America's miners?

So far, I am concerned that the slow pace of reform is leaving America's miners at risk. We've made progress. But MSHA has not moved aggressively to implement all of the provisions of the MINER Act. I want to share a few examples.

We required more rescue teams. Today, we don't have them. We required mines to have emergency response plans. Most mines have yet to finish them. We called for new technical improvements, reliable communications, and refuge chambers. Those improvements are still sitting on the drawing board. We required mines to install oxygen supplies. In some cases, MSHA told mine owners they're in compliance just for ordering the equipment, but MSHA has not yet pushed to have those oxygen supplies installed.

A rescue team that doesn't exist, an emergency plan that is incomplete, a radio that doesn't work, an oxygen supply that is not available, and a shelter that has not been built, will not protect miners when the next disaster strikes. We cannot wait for the next disaster. We need those safety components in place today.

With the MINER Act, Congress gave the Bush administration the tools to keep America's miners safe. Nearly 1 year later, the Bush administration has done too little, and moved too slowly. I am unwilling to let that situation continue.

We are going to hold MSHA and mine owners accountable, and we're not stopping just with the MINER Act. I'm working with Senators Kennedy, Byrd, and Rockefeller to draft new legislation we hope will further improve mine safety. Advances like proximity detectors, improved recordkeeping, and updated asbestos standards for mines.

The MINER Act is an important tool to protect workers. But it needs to be enforced if we're going to make progress. As we examine what other countries, like Australia and Canada, have done to protect their miners, there is certainly room for real improvements in the health and safety protections for American workers. We must build on the MINER Act promises, and speed its implementation. We know that research, like the research that's being conducted by NIOSH Spokane Research Laboratory in my home State of Washington, is identifying new ways for us to understand the risks of mining, and how to better protect our workers.

I remain committed to giving America's miners a workplace that is safe, and I want to thank our witnesses for being here today to share their expertise.

This morning we will hear from Dr. Jeffrey Kohler with NIOSH, Dennis O'Dell from the United Mine Workers of America, Mr. Steve Bessinger from the San Juan Coal Company, and Bruce Watzman from the National Mining Association. We look forward to all of your testimony.

And I will now turn to Senator Isakson for his opening statement, and thank him for his continued work on this critical issue.

OPENING STATEMENT OF SENATOR ISAKSON

Senator ISAKSON. Thank you, Chairman Murray.

A year ago I boarded a plane with Senator Rockefeller, Senator Kennedy, and Senator Enzi, and we flew to West Virginia and to the site of the Sago Mine disaster shortly after it took place.

That afternoon, we met with the families of the miners that were lost, and in particular, I had a brief—but significant—encounter with the family of George "Junior" Hamner. His daughter, then 22, gave me a picture of Junior that was just taken right after Christmas when he'd gotten a six-point buck in the mountains of West Virginia. That picture remains in my office with me today, and will stay with me, always, because it's a reminder to me of why we are really here.

I was very pleased to be one of the co-authors of the MINER Act, along with Senator Murray, Senator Rockefeller, Senator Byrd, Senator Enzi, and Senator Kennedy. And, I'm also quite pleased with a lot of the progress that has been made since that time.

You know, one thing that needs to be understood—I ran a company for 33 years. The safety of my workers was the most important thing to me. My assets had two legs, and I didn't want a single one of those legs getting broken, a single one of those people getting hurt. And, I'm impressed with what the mine industry has begun doing in many areas to respond to the MINER Act.

In particular, in the year since that incident took place, and later, the passage of the MINER Act, 86,000 new self-contained, self-rescuers are in place, and 100,000 additional units are to be added. Fifty-five thousand underground coal miners have all gone through training and quarterly review on the use of the equipment, and fifty-five thousand underground coal miners have received training on evacuation procedures.

All mines have submitted plans to provide post-accident breathable air to miners awaiting rescue, and 36 new underground coal mine rescue teams have either been added, or are in the place of being formed and trained. Those are positive steps forward to meet the absolute safety needs that we need to find.

I also was pleased last year to conduct, along with Senator Murray, an intensive roundtable, where we had folks from Australia, and Canada and around the world, looking at the new technologies in terms of trying to have two-way communications with miners underground, and additional enhanced communication with miners underground.

I am looking forward today to hearing the progress of some of that research, as I'm looking forward to getting a report from Australia in the not-too-distant future about some progress they have made in some of their underground communications.

The most important thing of this subcommittee is the occupational safety, health and welfare of the employees, which is equally the most important thing for the employer, because without the employees, employers have nothing. Working together, there's not a problem we can't solve, and with American innovation, and with the pressure from this committee, to continue to press forward on safety, I am confident we can continue to improve on the passage

of the legislation last year, and build on more safety in the future for the miners of America.

And, I thank the distinguished Chair.

Senator MURRAY. Thank you, Senator Isakson.

Before we begin, I do want to advise all of our witnesses that your entire statements will be included in this committee's records. In order to allow all of our members adequate time to ask questions, I would ask that you keep your oral statements to 5 minutes.

We are now going to turn to our first witness from the first panel, Dr. Jeffrey Kohler. He is the Associate Director for Mining at the National Institute for Occupational Safety and Health. Dr. Kohler is responsible for NIOSH's research portfolio in mining and construction, and is the past Director of the Pittsburgh Research Laboratory. He's also been a member of the mining engineering faculty at Penn State University.

Dr. Kohler, we welcome you, and look forward to your testimony.

STATEMENT OF JEFFREY KOHLER, PH.D., ASSOCIATE DIRECTOR FOR MINING, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, PITTSBURGH, PENNSYLVANIA

Mr. KOHLER. Thank you, and good morning, Madame Chair, and members of the committee.

My name is Jeffrey Kohler, and I am the Associate Director for Mining and Construction, Health and Safety Research at NIOSH. I am pleased to provide a progress report on our activities related to the MINER Act, and to highlight opportunities to further enhance mine safety and health.

NIOSH is conducting research on refuge alternatives, including their use in a comprehensive escape and rescue approach. We are addressing training, maintenance and section issues associated with chamber use, and developing test protocols.

NIOSH recently completed a report entitled, "Explosion Pressure Design Criteria" for new seals in U.S. coal mines, and we are working in partnership with MSHA, labor and industry to develop practices and technologies that will address existing mine seals.

The emergency supplemental appropriations 2006, provided $10 million to NIOSH, and these funds are expediting the movement of critical oxygen supply, communications, tracking and refuse technologies into the mining marketplace. I'd like to highlight three examples.

First, a more survivable leaky feeder communication system is being developed, and will be deployed in the Loveridge Mine in West Virginia within the next 9 months. And within the next week, a partial system will be installed there for testing purposes. This system will improve wireless emergency communications, and will provide the backbone for significant, improved functionality in the future.

Second, we are working with researchers at Fort Monmouth to adapt a military communication system. This Kutta System will work with leaky feeders, and will also function at medium frequency, so that if the leaky feeder is compromised in an explosion, communications will be maintained.

Third, we are developing a next generation SCSR, which will have a docking capability. We hope to further improve this next generation SCSR, with a full-face mask capability.

We must push the envelope to improve mine worker safety on a continuing and long-term basis. The contracts and grant program, and the inter-agency working group—both mandated in the act—will be very helpful in this regard. NIOSH has established a competitive grant and contract program to encourage development, manufacture and performance testing of mine safety technologies. Already, proposals have been submitted to advance mine seal reinforcement, wireless communications, and other technologies.

NIOSH has been working with other Federal agencies to address mining's technology needs, and our inter-agency working group will provide a more formal mechanism to transfer technologies among Federal agencies.

NIOSH is expanding its emphasis on safety technologies, and I'd like to mention two that have come to completion recently: the coal dust explosability meter, and the Personal Dust Monitor.

Today, determining a sufficient rock dust has been used to prevent a coal dust explosion requires taking a sample, sending it to a lab, and then waiting several days for the results. The coal dust explosability meter, developed by NIOSH researchers, and jointly tested by NIOSH and MSHA, will allow an immediate determination.

The Personal Dust Monitor, or PDM, provides the miners respirable dust exposure in real time, allowing immediate action to prevent exposures that could lead to Black Lung Disease. An exhaustive laboratory and in-mine testing program was recently completed, and the results demonstrated that the PDM is superior to the existing technology used to determine a miner's exposure to respirable coal dust.

The implementation of the MINER Act of 2006 will drive significant improvements to mine safety, and especially in practices related to disaster response. However, we should not miss the opportunity to shift the focus to the prevention of disasters, injuries, and occupational illnesses.

Some mines are already making important progress in this direction, and the entire mining industry should adopt a culture of prevention. One of several steps in this direction is the use of risk analysis and management.

A regulatory structure is a prerequisite to the success of a risk-based approach. However, compliance with regulations alone may be insufficient to achieve the goal of zero harm. Thus, the opportunity is to build on the existing regulatory structure, utilizing risk-based approaches.

In closing, NIOSH continues to work diligently to protect America's mine workers, and our research activities will enable NIOSH—together with MSHA, labor and industry, to better protect mine workers.

Thank you, Madame Chair, and I would be pleased to answer any questions.

[The prepared statement of Dr. Kohler follows:]

PREPARED STATEMENT OF JEFFERY L. KOHLER, PH.D.

INTRODUCTION

Good morning Madam Chair and other distinguished members of the subcommittee. My name is Jeffery Kohler, and I am the Associate Director for Mining and Construction Safety and Health Research at the National Institute for Occupational Safety and Health (NIOSH), which is part of the Centers for Disease Control and Prevention (CDC), within the Department of Health and Human Services. I am pleased to be here today to provide an update on our recent mine safety activities, a progress report on activities that have been initiated under the Mine Improvement and New Emergency Response Act of 2006 (MINER Act), and outline opportunities to further enhance mine safety and health.

The United States is fortunate to have an abundance of mineral resources to power the economy, and the highly skilled men and women who work in the mining industry every day are our most precious resource. Mine safety has improved significantly over the years, and 2005 was the best year on record. Yet, the mine disasters in 2006 and the double fatalities in a Maryland surface coal mine last month serve as painful reminders of the dangers inherent to this industry and our shared responsibilities to help ensure the safety and health of our mine workers.

NIOSH works to eliminate occupational illnesses, injuries, and fatalities through its research and prevention activities. Mining researchers at our Pittsburgh, Spokane, and Lake Lynn Laboratories have a long and successful history of working in partnership with labor, industry, and State and Federal agencies to develop and implement interventions that eliminate or control mining safety hazards or reduce exposure to harmful physical and chemical agents. The work of NIOSH scientists and engineers can be found throughout American mines. This is evidenced by safer design practices, equipment innovations that improve safety or health, technology to improve mine rescue, and improved training programs for miners. Over the years, significant safety and health gains have been achieved through the collective efforts of labor, industry, and government. Yet, more remains to be done, and additional effort will be required just to maintain the historical gains, as changing mining conditions present new safety and health challenges. Our program of mining safety and health research is driven by a strategic plan with specific performance goals. Our plan, developed with extensive customer and stakeholder input, identifies critical needs in mining safety and health knowledge and practices, and establishes research priorities for addressing those needs.

RECENT MINE SAFETY ACTIVITIES

NIOSH's mining research priorities address disaster prevention and response, traumatic injuries, cumulative trauma disorders, respiratory diseases, and hearing loss. The following three examples illustrate progress in these areas.

Personal Dust Monitor

NIOSH researchers, working in partnership with the Mine Safety and Health Administration (MSHA), labor and industry, and through a research contract to employ novel technology, successfully miniaturized a mass sensor that enabled a person-wearable dust monitor (PDM) to be built into a miner's cap lamp. An exhaustive laboratory and in-mine testing program was completed in the summer of 2006. Some additional issues related to the accuracy and operation of the PDM were raised in the fall of 2006. Each of these was researched, and the potential concerns were found to be inconsequential. The results demonstrated that the PDM is superior to the existing technology used to determine a miner's exposure to respirable coal dust. It is accurate, precise, durable, and empowers miners and mine management with real-time dust-exposure data. Access to real-time data allows for the prevention of overexposures that lead to the development of Coal Workers' Pneumoconiosis (commonly referred to as "Black Lung" disease). Current technology does not provide this key information until days or weeks after the exposure has occurred.

Coal Dust Explosibility Meter

Rock dust is applied to coal mine surfaces to prevent coal dust explosions, and if sufficient dust is applied, an inert mixture between the two dusts is achieved. The percentage of inert material in the mixture is specified by current regulation. However, a determination of this percentage by an MSHA inspector or mine operator requires taking a sample and sending it to a distant lab for analysis, which can take several days. The coal dust explosibility meter developed by NIOSH and jointly tested by NIOSH and MSHA researchers will allow an immediate or real-time determination by mine operators, or MSHA inspectors, of whether an inert ratio has been

achieved. A pre-production model is currently undergoing approval testing at MSHA, and commercial production of this lifesaving, new technology will begin as soon as it is approved for use in underground coal mines. NIOSH received the Research & Development 100 Award of 2006, recognizing the coal dust explosibility meter, as one of the top technological innovations of the year.

Diesel DPM Workshop

NIOSH research benefits mineworkers most when it is adopted into practice at the mines so nearly every NIOSH project draws on the institute's Research to Practice initiative, which focuses on transferring and translating research findings, technologies, and information into highly effective prevention practices and products which are adopted in the workplace. In the fall of 2006, the Nevada Mining Association asked NIOSH to put together a workshop focusing on practical methods and technologies for the control of diesel particulate matter from mining equipment used in underground mines. NIOSH assembled a team of technical experts from its labs, the mines, and MSHA, and then developed and conducted a training session entitled "DPM Workshop—A Practical Workshop on Strategies and Technologies to Reduce Miners Exposures to Diesel Particulate Matter and Gases" in Reno, NV, in January 2007. Attended by over 175 participants, this was so successful and well received that a second DPM Workshop will be conducted in June in conjunction with the annual Elko Mine Exposition. Similar workshops are being planned in the East to accommodate requests from the coal and stone industries.

PROGRESS UPDATE ON NIOSH MINER ACT ACTIVITIES

NIOSH is also making progress in mine safety through the MINER Act. This bipartisan legislation has created an unprecedented environment of partnership among labor, industry, and government. The MINER Act mandates an increased focus on technology development, testing and evaluation to expand the available technologies for disaster prevention and response. As mandated, NIOSH is going through the process required to formally establish the Office of Mine Safety and Health. In the meantime, under my lead as Associate Director, NIOSH continues to coordinate mine safety and health work that occurs across multiple parts of the agency. In addition, NIOSH has established an interagency working group to provide a formal means of sharing technology that would have application to mine safety. The working group currently includes representatives from NIOSH, MSHA, the National Aeronautics and Space Administration (NASA), and a number of research labs or offices from within the Departments of Defense, Energy and Homeland Security.

The MINER Act directs NIOSH to establish a competitive grant and contract program to encourage development, manufacture, performance testing, or investigation of related issues for new mine safety technologies and equipment. We believe that this can be a powerful vehicle for bringing technology to bear on the solution of mining safety and health problems. The contracts portion of this new program was announced on March 2007, and it will remain open until September 2008. This offering will provide funds to conduct research, exploratory development, testing, or evaluations of new technologies to improve mine safety, or to adapt technologies from other industries, that could result in improved safety for mine workers (additional details are available at: *www.cdc.gov/niosh/mining*). We have received proposals for innovations in reinforcing existing mine seals, communications and tracking, and fire suppression technologies, and we are encouraged by the quality of the responses over the short period that the announcement has been open.

The MINER Act also assigns responsibility to NIOSH to conduct research and field tests concerning the utility, practicality, survivability, and cost of various refuge alternatives. Our report will be submitted by December 2007. NIOSH staff began work in this area shortly after the passage of the act. Significant progress has been made to date. We have examined the use of refuge alternatives in other countries, collected information on practices and regulations, and established refuge chamber collaborations with researchers in Australia and South Africa. NIOSH has collected information, through a contract with the National Technology Transfer Center, on all refuge chamber applications in the United States, and we have formulated concepts for using refuge alternatives in escape and rescue strategies. NIOSH is also addressing the broader training, maintenance, and inspection issues associated with chamber use, as well as developing protocols for the testing of chambers.

The MINER Act directs MSHA to finalize new standards for the sealing of abandoned areas in underground coal mines. NIOSH initiated an intensive effort to develop an engineering-science basis for MSHA to use in its development of improved safety standards for sealing of abandoned areas. This effort culminated last week with the release of NIOSH's report on "Explosion Pressure Design Criteria for New

Seals in U.S. Coal Mines." We are working closely with MSHA, labor, and industry to resolve technical issues related to improving the safety associated with existing mine seals.

NEW INNOVATIONS—MINER ACT OF 2006 AND SUPPLEMENTAL APPROPRIATION

Moving critical safety technologies, for example oxygen supply, emergency communications, and miner tracking, from the laboratory into the mine is a high priority for NIOSH, as is adapting technologies from other military or civilian applications to the mining industry's needs. The Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (P.L. 109–234) provided a $10 million Emergency Supplemental Appropriation (ESA), that will have a very positive effect in increasing the availability of critical oxygen supply, communication and tracking technologies. The goal is to facilitate the adaptation and movement of these technologies from other industries or from prototype stage to commercialization and into the mines, as rapidly as possible, and this is well underway.

Progress towards this goal has been expedited through a structured approach to the challenge. First, NIOSH developed a high-level "road map" for success, taking into consideration, the availability of technologies, commercial availability of equipment, as well as the technical and logistical difficulties in meeting the schedule and performance expectations of the MINER Act. NIOSH determined that the plan should include improvements to legacy systems as well as the introduction of new technologies. We believed that it was essential to begin with an accurate assessment of the existing technology base in order to set off on a path toward success. The initial challenge for NIOSH was to invest sufficient time in the early analysis to ensure that the contract efforts are in the areas most likely to yield results so that we can help move new technologies into the mines as expeditiously as possible.

Our effort to quickly award the right mix of contracts consisted of two phases: the technical preparation phase and the contract acquisition phase. The technical phase consisted of significant engineering-science work to develop the scope of work for the contracts, testing of system prototypes in operating coal mines and at NIOSH's Lake Lynn Experimental Mine, and evaluation of claims from vendors on technologies that were represented as "solutions" for the mining industry. Stakeholder meetings including the NIOSH Emergency Communications Partnership were held periodically as well. NIOSH also met with Australian labor, industry, and government officials to review findings and the proposed approach, as well as other alternatives. Within 3 months after the emergency supplemental appropriation (ESA) was approved, a consensus was reached among all groups that NIOSH's plan for the available funds was appropriately focused on the following: targeting a balanced set of technologies that address the mining community's needs in the critical gap areas; selecting technology subsets that have a higher probability of success in the short term; and meeting the goal of the emergency supplemental appropriation.

The technical preparation phase defined the scope of work and has helped to ensure that the most promising and critical technologies are being supported under the ESA. In the contract acquisition phase, the statement of work for each technology area was developed and contract solicitations were advertised for the purchase of services that will lead to development and demonstration of new technologies to meet the intent of the MINER Act. The ESA is subject to the rules and regulations for full and open competition as prescribed by the Federal Acquisition Regulations. The acquisition phase culminates in contract award, and all contracts have either been awarded or are anticipated to be awarded within the next month.

Table 1 displays the various communication and tracking technology solicitation areas NIOSH is actively pursuing, and the respective anticipated award and completion dates.

Table 1.—Communication & Tracking Procurements

Solicitation	Technical Phase Completion Date	Award Status	Projected Completion Date
Adaptation of the U.S. Army "Kutta" System.	August 2006	Awarded January 2007	April 2008
Survivable Leaky Feeder	August 2006	Awarded March 2007	August 2008
Hardened Mesh/Node System	September 2006	Anticipated May 2007	September 2008
Communications Guidelines	November 2006	Anticipated May 2007	March 2008
Tracking System	December 2006	Anticipated June 2007	December 2006

The projected completion dates are based on historical estimates and projections, and are directly dependent on the anticipated award dates being met. It should be noted that a number of factors may affect award dates and therefore project completion, such as the number of bidders, the extent of technical clarification or budget clarification meetings necessary, the complexity of the negotiated changes, and the time allotted to prepare best and final offers.

For oxygen supplies and refuge chambers, Table 2 displays the various solicitation areas NIOSH is actively pursuing, and the respective actual or anticipated award dates. As indicated in the table, the initial technology survey contract work has been completed.

Table 2.—Oxygen Supplies and Refuge Chambers

Solicitation	Technical Completion Date	Award Status	Projected Completion Date
Refuge Chambers Survey	July 2006	Awarded September 2006	Completed
Hybrid SCSR	August 2006	Awarded February 2007	August 2008
Dockable SCSR	August 2006	Awarded February 2007	August 2008
Refuge Chamber/Trapped Miner Location—Preliminary Study.	October 2006	Awarded November 2006	Completed
Refuge Alternatives	December 2006	Awarded April 2007	November 2008

Technology Availability and Progress Summary

The products resulting from NIOSH development efforts are expected to become available in 2007 and continue into 2008 and beyond. These solutions are focused on providing the best approaches to meet the challenges that the MINER Act aims to address.

In order to move forward with our work under the act and the Emergency Supplemental Appropriation, NIOSH has developed a communications systems "road map," which defines specific requirements based on a set of assumptions. This "road map" describes available communications technologies today and outlines viable technical options for upgrading those investments to provide even greater functionality during post-accident scenarios as the new technologies come online.

NEXT STEPS TO CONTINUE ENHANCING MINE SAFETY AND HEALTH

The implementation of the MINER Act of 2006 will drive significant improvements to mine safety, especially in practices related to disaster response. An important opportunity exists today to shift the focus to prevention—of explosions, fires, inundations, injuries, and occupational illnesses. I will use two examples here to illustrate next steps: a change of approach using real-time dosimetry to eliminate Black Lung disease; and the broad-based approach of risk analysis and management as a vehicle to reduce harm.

Black Lung disease continues to be a serious problem. Despite the progress that has been made, and the declining number of cases, between 2000–2004 more than 4,100 men and women died from this debilitating lung disease. While the dust exposures leading to Black Lung can take years or even decades to produce their deadly results, we think it is time to take a different approach. Technological advancements are making possible real-time dosimetry. The Personal Dust Monitor (PDM), which I described earlier, makes it possible to measure dust exposure in real time, rather than waiting a week or more for the lab results of the current sampler. NIOSH is studying how miners use the PDM, and we have seen respirable dust exposure reductions of 50 percent over a several week period, as the face crews have acted on the information available from the PDM. The PDM would allow exposures to be automatically downloaded to a database for every working shift. Such data would be invaluable to lower exposures and to assure that exposures remain low on every shift. Thermo Fisher Scientific Corporation, (Franklin, MA) recently bought the rights to the PDM and is poised to begin commercial production of the device. The company estimates availability of PDMs within 4–6 months after the completion of all rulemaking.

The concept of "zero harm" has developed over the years and has the objective of reaching a point where there are zero fatalities and serious injuries. This concept was applied in the Australian mining industry over a decade ago after the Moura Mine disaster, and we could benefit from applying those lessons in the U.S. mining industry today. In Australia, they began the transition from a compliance-based system to a more proactive risk-based system. This was highlighted in the report of the Mine Safety Technology and Training Commission published in December 2006,

in which that tripartite commission clearly stated the necessity of establishing an objective of zero fatalities and serious injuries, and laid out a path to its achievement. While the "path" is articulated in 75 recommendations, its vision really reduces to creating and enabling a culture of prevention. An important foundation for a culture of prevention is risk analysis and management. Risk analysis and management is practiced to some extent at many mines, and in some mines it is a fairly formal and well-developed process. However, the opportunity exists for it to be practiced at every mine.

The existence of a regulatory structure and enforcement of regulations are prerequisites to the success of the risk-based approach. However, compliance with regulations alone will be insufficient to achieve the goal of zero harm. Thus, the opportunity is to complement the existing regulatory structure with a risk-based approach to improving safety and health. It took the Australians a decade to develop the robust structure that we see today, but we need to make a start in this country.

We have developed a project at NIOSH to begin an industry-wide process. Initially, we are focusing on major or catastrophic hazards, such as explosions, fires, and inundations. We have conducted workshops, with the help of Australian experts, and we have worked with labor and management at nine mines, five in underground coal and four in underground metal/nonmetal, to conduct major hazard-risk analysis and management planning. These case studies are being used to prepare workbooks and templates for application by other mines. Additional case studies and workshops are in process. This will be followed by a national effort to educate and train the industry to utilize this powerful tool.

CONCLUSION

In closing, NIOSH continues to work diligently to protect the safety and health of mineworkers. The MINER Act and supplemental funding for mining research are enabling us to make significant improvements in the areas of communication and tracking, oxygen supply, and refuge alternatives. Moreover, our safety and health research program is addressing the critical areas identified by our customers and stakeholders, and through our research, development, demonstration, and diffusion activities, we are enabling a shift to a prospective harm reduction culture in the mining. I appreciate the opportunity to present our work to you and thank you for your continued support. I am pleased to answer any questions you may have.

Senator MURRAY. Thank you very much, Dr. Kohler.

We have been joined by a special guest to our subcommittee today, who has a special interest and passion on this issue.

Senator Rockefeller, thank you for coming today, would you like to make any opening statements?

Senator ROCKEFELLER. No. Thank you.

Senator MURRAY. Thank you. We'll turn to you for questions in just a few minutes, but we do welcome you to our subcommittee today.

Dr. Kohler, I understand that NIOSH has been working on testing airtight emergency shelters for use underground, and that the State of West Virginia has actually moved ahead and improved shelters for use in their mines. We know that other countries have already put these refuge chambers to use, and we know today that one of the real risks to our miners is their inability to survive for periods of time without clean air and other critical supplies. Can you share with this subcommittee what is the status of NIOSH's activities in this area?

Mr. KOHLER. Sure. As part of our comprehensive research and testing program for refuge shelters to prepare the report that we'll be delivering to Congress this December, we're looking at a wide range of refuge alternatives, including refuge chambers, and including other alternatives in training, testing, maintenance, and so forth.

We have agreed to assist the State of West Virginia to perform some testing on some of their chambers. If you compare the current

alternative, which is to barricade—you know, use some lumber and some plastic sheeting and some nails—the use of chambers is a far sophisticated and much better solution.

While it's true that today we don't know, perhaps, every single thing we'd like to know about chambers, it's our belief that the State of West Virginia has really identified the critical parameters identifying those chambers, and we would not expect that any of our work would significantly change what the State of West Virginia has done.

Senator MURRAY. What has caused the delay in the implementation of the recommended use of refuge chambers in coal mines?

Mr. KOHLER. You mean that was in the original 1969 Act?

Senator MURRAY. Correct.

Mr. KOHLER. That actually pre-dates my time. When I was a mining engineering student in the early 1970's, my professors told me that refuge was a concept that people had put aside, that they were more interested in evolving escape technologies. And, for the 30 years beyond that, there was little action in this country on refuge chambers.

Senator MURRAY. Why haven't you moved forward on a recommendation to implement?

Mr. KOHLER. We're moving with great dispatch to remove any technical barriers, or fill any knowledge gaps, so that refuge chambers can be used as soon as possible, and we fully support the State of West Virginia's plan to move forward.

Senator MURRAY. How long before you expect that recommendation to come forward?

Mr. KOHLER. The final report? Well, our final report, we won't have everything finished until late this fall. I don't think that is going to significantly change what the State of West Virginia wants to do this summer.

Senator MURRAY. Because I'm keeping that in mind, in terms of other mines.

Mr. KOHLER. In other mines? I see no barriers there. I mean, there's some risk in moving forward without completely knowing all of the information, but I think Mr. Rahall said it very well at the hearing last week. He said,

> "When it comes to introducing new technologies, coal miners will undoubtedly benefit from a deliberative, well-researched process. But, it would be shameful if that process were used as an excuse for further delay and inaction."

And, I think that there's no excuse for delay and inaction in moving forward with the use of the refuge chambers, but also with the understanding that there's additional things that we will learn, and we can refine that process as we go down the road, and we can open up, maybe, more refuge alternatives as well.

Senator MURRAY. As you know, I am very concerned about the use of asbestos in the United States, and the plight of thousands of victims of asbestos-related exposure on the job. It really troubles me that MSHA has delayed its rulemaking on reducing the allowable limit for asbestos exposure in mines. Miners, as you know, are very vulnerable to asbestos disease, as other workers are, and they really deserve the protection of law. Can you share with this committee what research NIOSH has done to help us move to better controlling asbestos exposure in mines?

Mr. KOHLER. NOISH has really done a significant amount of research to try and identify the asbestos problem. Recently, they published an Asbestos Road Map, which identifies the remaining science issues that need to be addressed, and it has proposed a research plan to complete all of that work.

Senator MURRAY. What are the next steps that need to be done?

Mr. KOHLER. I think the next steps are those outlined in the Asbestos Road Map which would include some additional epidemiological studies, and perhaps some look at control technologies.

Senator MURRAY. Thank you.

Senator Isakson.

Senator ISAKSON. Thank you very much, Dr. Kohler. On that question—again, I'm not sure I know this to be true, but isn't it true that most of the mine companies try and stay within the coal seam to keep from getting naturally-occurring asbestos to permeate the mine?

Mr. KOHLER. That's correct. And, we do not at this time, have any data to suggest that there is a problem with asbestos bringing minerals in underground coal mining. I think metal, mine metal, there are other issues.

Senator ISAKSON. I'm really excited because the Self-Contained Self Rescuers in the docking system that you referred to, I think, is a breakthrough from the hearing that we conducted, the roundtable we conducted here last year. Would you—for the audience's benefit, and really, I think, the benefit of the committee—would you amplify what that actually allows the SCSR to do?

Mr. KOHLER. Yes, the SCSR has a limited capacity, perhaps upwards of 60 minutes, and so at some point, it may be necessary to change SCSRs. One of the more dangerous tasks in using an SCSR is actually taking off the SCSR and donning, or putting on, a new one. You know, the danger is that you would accidentally take in a breath of toxic air.

The docking one allows you to put on the SCSR and then leave it on, and then you simply snap in and snap out cartridges.

Senator ISAKSON. That is a great breakthrough, and really terrific.

The recent results announced on the Sago Mine investigation, if I remember correctly, determined conclusively by a demonstration done by top scientists that two lightening strikes, four seconds apart, ended up producing an arc via an abandoned cable underground which caused the explosion, is that correct?

Mr. KOHLER. I understand that that was their finding.

Senator ISAKSON. Then, just out of curiosity, that begs the question about lightening and grounding—are the grounding, are there capabilities around the coal mine to attract lightening, and ground it away from conduits that otherwise it might reach?

Mr. KOHLER. I think there are a couple of very important points. One is, that we do know how to protect mines, to some extent, from the adverse affects of a lightening strike, and we certainly need to do all of those things, many of those things are spelled out in the existing regulations.

Secondly, I think that we've learned from a global experience that there appears to be a credible possibility of a lightening strike

initiating a gas explosion. And that's something that tells us that we need to really protect our GOB areas, our sealed areas.

Senator ISAKSON. Yes, because that's where that spark ended up going in the Sago case.

To what extent is NIOSH involved in testing and improving any underground communication devices, and in particular, are there wireless communication devices that a miner can use post-accident to communicate with the surface?

Mr. KOHLER. We are heavily involved in the research, development and testing, we don't certify those products, that rests with MSHA. We're heavily involved—under our Emergency Communication Partnership, which includes MSHA, industry and labor and manufacturers, we have tested over 40 systems, to date. And, I'm pleased to say that progress is being made, you heard me say, for example, that one of the systems funded under the emergency supplemental appropriation, a piece of that will be installed this week and next week for testing at the Loveridge Mine in West Virginia, the full system is expected to be in in about 9 months.

The kind of systems that West Virginia is requiring in its mines to go in later this year, are systems which will be more advanced than current systems that exist in many mines. And, to that end, that's also a good thing.

Senator ISAKSON. In your testimony, you made reference to working with the U.S. military to this regard, I want to compliment you on that, because I recall, when we had the roundtable I've referred to before, a couple of times, that had really not—that engagement hadn't taken place before, and I think they have a lot of technology, both the type you can talk about, and the type that's probably secure information. But, I commend you for working with them on that.

As I understand it, though, there still is not a wireless two-way communication system operating, even in Australia, is there?

Mr. KOHLER. Not with the degree of functionality that we're all hoping for.

Senator ISAKSON. Well, I encourage you to continue working with the military, I think that's the single most important thing so that the miners have a contact, and so the mine officials actually know where the miners are. That could have solved a lot of problems in the Sago incident.

And, I appreciate your testimony.

Thank you, Madame Chair.

Senator MURRAY. Senator Rockefeller.

Senator ROCKEFELLER. Thank you, Madame Chair.

My question will appear to be hostile, but it's not. The NIOSH—and I remember when I was Governor going by that building up at W View many times, and the reputation of NIOSH then, and the reputation of NIOSH, to some degree, today is a certain degree of separation from the realities of coal mining, and the realities of being a producer, or a miner, because of the fact that you are researchers, you're Ph.D.s.

And, so the immediacy of what's going on inside the mine is in your job description, but it isn't like when there's political pressure, in the good sense. That is, Sago happened, and everybody went down there and all kinds of things did begin to happen.

So, what I'm interested in, and you're talking about philosophically, No. 1, you're under funded, MSHA is under funded, MSHA has been—in my mind—somewhat less than impressive, I'm not concluded yet on NIOSH. But, if you're both under funded, which means that people are either overwhelmed, or their job requirements are cut, it takes away some of the sense of urgency, I would think. And, I have not necessarily associated NIOSH—in my experience in the Governorship and the Senate in West Virginia, with forward pushing. Forward thinking, yes, forward pushing, no.

For example, the relationship with the State government. Relationships with State governments are very—Governors are very proprietary. They do what they think is the right thing to do, or whatever, but they just do it. And NIOSH is a factor, MSHA is a bigger factor because it's got a different kind of clout.

But—describe to me—how would you talk about the sense of urgency as a result of these mine disasters, and the morale and the feeling within your community?

Mr. KOHLER. Yes, thank you. I appreciate the opportunity to change your mind about NIOSH and its sense of urgency, and the value that it brings to the mine.

If you talk to our researchers at our Pittsburgh, Spokane and Lake Lynn laboratories, you will find that—at least for the past 8 or 9 years, every day, every time there's a group meeting or whatever, the first question is, "What have you done for mine workers today?" You know, we drive home the point that, when the taxpayers send us a pot of money, they expect value in return, they expect us to do something to eliminate fatalities, injuries and illnesses.

So, every day we try and impress upon people that, yes, while you do your job through research and prevention activities, that has no meaning until you apply it to practice——

Senator ROCKEFELLER. Do you really start out with that question every day?

Mr. KOHLER. Every single time we're with people, we're with managers, or employees, we always ask that question, yes. Because, we need people to understand that the research that they do only takes on value if it's solving real problems for real people.

So, I think there's a very compelling sense of urgency, and I would hope that our customers and stakeholders would be able to shed light on how they see that from their perspective.

The disasters, last, really compounded both the problem, and the sense of urgency. You're correct that our resources are very thin, staffing is an issue because of retirements and the aging workforce, morale is good, because I think people see the purpose. They see that their work is, and can make, a tremendous difference.

So, I would say that while we look forward to having the mandates of the MINER Act, for example, funded, so that we can carry them out, our ability to do good work is occurring, and it's occurring with the resources that we've been allocated. We've had to set priorities, but I think we've still been able to deliver good value.

Senator ROCKEFELLER. Thank you, Madame Chair.

Senator MURRAY. Senator Brown.

STATEMENT OF SENATOR BROWN

Senator BROWN. Thank you, Madame Chair.

I appreciate this hearing. Chairmen in this institution call hearings for a whole lot of reasons, and I want to thank Chairman Murray for the hearing she did some weeks ago on asbestos in the tunnels around the Capitol. That hearing absolutely will lead to a better life for those workers in the mines, in the tunnels under the House and the Senate, and the kind of exposure to asbestos that they've been subjected to, and nobody cared, and she stepped up, and it really did matter. So, thank you for that. I hope this hearing can help yield the same kind of results.

I have, for 6 or 7 years, worn on my lapel a depiction of a canary in a coal mine, given to me at a worker's memorial day some 5 or 6 years ago by the steel workers, symbolizing the progress we have made in all worker safety issues, and environmental issues, but also indicating the progress we still need to make. I think the legislation last year was, obviously, a good step.

In my State, in Ohio, which is a coal State—not quite as much as the Senators from the State of West Virginia, but they're partly, with this legislation, partly with local involvement, State involvement, we have made some major progress, in the 11 underground coal mines, 4 underground, other material mines in my State. I want to pursue just one question, and from what Senator Isakson said about the communications, and I know the technology is not there for what we need for miners to be in touch with people above ground, but could you tell us within the confines of, as far as you can go with military issues and intelligence issues, the state of the technology and what NIOSH is doing, and what you see others doing to move forward on better technology issues, and advancement?

Mr. KOHLER. Yes, I think it's important we realize that there are things that we can do today. And, if we choose those things correctly, they will also propel us into the future. And, I think that today, for example, we can install—either today, or very shortly—hard-end, or more survivable leaky feeder systems. A leaky feeder system is a hybrid system, it is wireless part of the way, and then it relies on a hard-wired backbone to get out of the mine. If the hard-wired backbone is far enough from where the explosion is, it won't be compromised. I think, in West Virginia, many of the companies are considering that as one viable option, and that's a good option, because it advances what we have in many mines today, although there are some number of underground coal mines that are already using that technology, and have been using it for some time.

But then there's the opportunity to try and build on these legacy systems. So, for example, the systems that would be put into the West Virginia mine, if the Federal definition of wireless becomes consistent with the State definition, then in a year, 2 years, as these more advanced systems come on, they will utilize the existing leaky feeder backbone that's already in place.

The military system, for example, we're very excited about, because it will work with these legacy systems, it will work with the leaky feeder system. But, if the leaky feeder is compromised in an

explosion or a fire, without the miner ever knowing it, the software-defined radio will switch to a medium frequency, and medium frequency is very parasitic, it will hop a ride on a water line, on a conveyer structure, on a wire corridor life line, and just find its way through the mine. And then when it gets close to the leaky feeder backbone that is not compromised, it'll jump back onto the leaky feeder backbone, and out of the mine. The military system will make that possible. And I think that represents a tremendous advance. It's not the perfect system, but it represents a tremendous increase in the protections afforded to mine workers.

Senator MURRAY. Dr. Kohler, as you know, problems with mine seals have been determined to contribute to several of the coal mine fatalities. I know that NIOSH drafted a report for comments to be submitted by late March of this year, and last Friday issued an emergency temporary standard to strengthen the requirements for mine seals, requiring them to withstand up to 50 psi of force. Can you talk a little bit about that? And what recommendations do you have with regard to mine seals?

Mr. KOHLER. NIOSH completed its final report now, or final draft on the mine seals—all of the original recommendations in the draft report withstood the scrutiny of the peer review process, although there were a number of small enhancements and improvements made to the report. So, the report's recommendations are as they stood originally.

You're correct, also, that MSHA has issued an emergency temporary standard, I have not had a chance to review that standard, so I can't comment on it.

Senator MURRAY. Are you continuing to explore the need to further strengthen that standard?

Mr. KOHLER. I think that we would like to look at that standard, their ETS, and see how it compares to our recommendations in our report.

Senator MURRAY. A number of recent mine fatalities have been related to workers getting caught in operating equipment. It would appear that mine owners are not complying with the longstanding "lock-out, tag-out" standards. Can you talk to us about what NIOSH has done to address the "lock-out, tag-out" challenges in our mines?

Mr. KOHLER. Yes, we've done both training interventions, and technology interventions. NIOSH developed, for example, a proximity warning system to prevent a mine worker from being pinched between a rock and a hard place, if you will. Small belt-wearable unit, if the mine worker gets too close to a particular piece of equipment, he gets a warning, and if he gets within a red zone, it actually de-energizes the equipment. So there are—and that technology has been patented and licensed and is manufactured, there are options for trying to attack this problem of powered haulage fatalities and injuries.

Senator MURRAY. While you're here, I wanted to ask you one other question, it's about Black Lung disease which young miners are still coming down with. After three decades of focus on this issue, you would think that there would be better new technology and stronger health and safety rules.

Can you talk to us about any changes in the coal extraction processes that might be contributing to the continued high rate of Black Lung?

Mr. KOHLER. Yes, it's a multi-faceted problem, but in the past 5 years, there have been over 5,000 Black Lung deaths, okay, and that's despite years and years of progress, despite the fact that the numbers are coming down, we're still seeing in young miners, the development of very rapidly progressing and very serious coal worker pneumoconiosis. This is a long-term disease that develops over many years, and clearly we need a new approach.

One opportunity that exists is with the new PDM, the Personal Dust Monitor. The PDM allows the mine worker to know, in real time, what the exposure is. We did some studies, and we're ongoing studies, we're looking at how miners use the PDM.

In the most recent case, after just a couple of weeks of wearing the PDM, the mine workers reduced their exposure by 50 percent, because they knew in real-time what the exposure was, so they were able to make changes to the controls to drop the dust down right then and there, rather than having to wait a couple of weeks to find out, when it's too late.

Secondly, the PDM records the exposure, and that's downloadable to a database every day. So, it then becomes a tool, for mine management and engineering to use to improve dust control, by knowing exposures every single day, it also allows us to ensure that exposures are being kept low every single day, not just on certain designated sampling days. So, that's one very important technology that would be a new approach, and might allow us——

Senator MURRAY. This is still in the testing process?

Mr. KOHLER. No, I wouldn't characterize it that way. We've really finished all of the testing on the PDM, and those tests have shown it to be more accurate, more precise, more reliable than the existing——

Senator MURRAY. Is it voluntary, at this point?

Mr. KOHLER. It is voluntary. And it is not manufactured at this point, the manufacturer is waiting to see what the market is going to be for such a device.

The manufacturer, Thermoscientific, has suggested just a week or two ago in a partnership meeting that we had with labor, industry, MSHA and NIOSH, that they could have the device available for sale in approximately 4 to 6 months, after all rulemaking activities related to the device are finish. So, this is within our reach.

At the House hearing last week, there was also some talk of dust monitors, and this technology, it's been a 10-year path to walk to get it to where it is, but we now have a tool at our disposal.

Senator MURRAY. OK. Thank you very much.

Senator Isakson.

Senator ISAKSON. Just one question, on mine seals. Didn't I understand that there's a doubling of the requirement in terms of the strength of those seals? Is that——

Mr. KOHLER. In the ETS? You're asking if there's a doubling? I have not had a chance to review it, so I don't know what it says.

Senator ISAKSON. Would you check on that and let me know?

Mr. KOHLER. OK.

Senator ISAKSON. Because I had understood they had increased both strength as well as testing. Testing and visual inspection on a required regular basis on those seals, so if you would find that out for me, I would appreciate it.

Mr. KOHLER. I will do that.

Senator MURRAY. Senator Rockefeller, do you have any additional questions?

Senator ROCKEFELLER. I like what you said about testing every day on dust level samples, because that's sort of the opposite of TV sweeps, right? In other words, they know it's coming up, so they put their most horrible and gory programs on, to make sure that lots of people will watch. This is the opposite kind of philosophy. And, I like that.

If they are being measured every day, that's the measuring of the miner. That means, that if the measure of the miner is not doing well, the consequence for the coal company should have some effect. There should be some consequence for them. That's not necessarily the case, so isn't it just in the sense of figuring out what the dust, what the Black Lung, so to speak, intake is on a daily basis, and dust levels on a daily basis, but there's not necessarily a relationship between that and what the mine has to do?

Mr. KOHLER. I can't speak as to how MSHA may make a consequence for what the readings are, but I can say that from a science and engineering application point of view, this gives the mine workers, and mine management, a tool that, in real time, they can change their environment, so that they will not be exposed to these concentrations of dust that can lead to Black Lung. And they'll be able to do this, shift after shift after shift.

Senator ROCKEFELLER. But, over the 100-year history of the coal mines, that has not been the case. Now, NIOSH has not been around to measure it on a daily basis. Do you send to the coal companies, on a daily basis, the measurements within their individual mines?

Mr. KOHLER. No, with this technology, this monitors, actually, part of the cap lamp, so that it's built into the battery, and it's built into the cap lamp. Each day—and as they work, they can look down and they can see what their exposure is, and what their projected exposure is, and they can act on that.

When they leave the mine——

Senator ROCKEFELLER. You're talking about the miner?

Mr. KOHLER. Yes. And when they leave the mine, whatever value was accumulated in their monitor is downloaded to a database.

Senator ROCKEFELLER. To a database where?

Mr. KOHLER. Well, that is, could be determined, it's certainly at the mine. And that database could be available, it could be accessible to us, to others. But the very useful thing is that a record can be made of what the actual exposure was.

Senator ROCKEFELLER. No, and I very much agree with you and applaud you for what you're evidently doing. But, the only consequence that moves me, is if the data which is coming down which shows very irregular days, or good days, bad days, at an alarming level. This doesn't make much sense, but it makes my point. Very few Appalachians ever get to go into a coal mine, eventhough it's their culture, and their psychology. You have to either be a Gov-

ernor, or Eleanor Roosevelt, or somebody else to get in there. And, that's for safety reasons, and that makes sense.

I went in very frequently when I was a Governor, and I always noticed that everything was just like somebody had painted a new house. In other words, the walls were all dusted, and everything was all beautiful.

Now, if you have a daily measurement, you can't do that. But, the only point of having the daily measurement is that there be a consequence if the daily measurement falls below an acceptable standard, or rises above an acceptable standard. And that, you say, is up to MSHA, and not up to you?

Mr. KOHLER. That is correct, I mean, as the enforcement agency, they——

Senator ROCKEFELLER. Do you and MSHA talk about that?

Mr. KOHLER. Excuse me?

Senator ROCKEFELLER. Do you and MSHA talk about that?

Mr. KOHLER. We talk about what exposure levels should be. We do not talk to them about their assessment of penalties or consequences, but certainly I would agree that there has to be a consequence for not achieving a statutory requirement.

Senator ROCKEFELLER. But, wouldn't that really push you towards talking with them about what consequences ought to be? Because it's not my impression that mines willingly do that. They do that under pressure. And, I don't have any objection to that, because that's the American way. And, it's been that way always.

But, it does depend upon you and the database linking up with MSHA, and their scanty budget, and—in my judgment—somewhat faulty, recently, those are lax attitudes towards coal mine safety. And then to the coal producer, himself or herself. In other words, the link has to follow for there to be a consequence, As well as, that we know about it.

Mr. KOHLER. Yes.

Senator ROCKEFELLER. Thank you.

Senator MURRAY. Senator Brown.

Senator BROWN. I just want to followup with Senator Rockefeller, because I think he's exactly right. You use terms like, "the data the miner collects every day," the exposure of this dust. You said the data, you used the term, "could be accessible," the record, "could be made"—how do we assure that on several levels. First, that the mine administrators know the level; second, that the mine regulators at MSHA know the level; and third, that they have that data to precipitate action. You have that data to collect and contribute to public health, if you will, by direct action, but also by studying and learning from it. How do we make sure that this data goes where it ought to, as Senator Rockefeller suggested? Rather than having to be pressured in any particular time, that it automatically—is it sort of beyond the reach, that it could be reported every day, is that something that makes sense? It sounds like it does, from the line of his questioning.

Mr. KOHLER. It could be reported every day, I mean, the data is available, we would certainly recommend that the data be examined by everybody—by regulators, by researchers, and certainly by mine management.

Senator BROWN. And, why isn't it?

Mr. KOHLER. Well, right now, it's not available, this device is not being used, yes, but it offers that opportunity, once it's commercialized.

Senator BROWN. What will precipitate everyone getting it? Who needs to make that decision, the mining companies, the Government? Who?

Mr. KOHLER. It would be my opinion that a regulation requiring its use would ensure that it would be available to every working section of every coal mine in this country.

Senator BROWN. Thank you.

Senator MURRAY. Senator Rockefeller had one last question.

Senator ROCKEFELLER. Thanks, Madame Chairman.

Following up, on Senator Brown's question—the data which you collect, is that turned over to coal mines, is that their property? And, if it's their property, is it not MSHA's property?

Mr. KOHLER. Strictly speaking, with these devices, we don't collect the data. The mine workers are actually collecting the data, because they are wearing the device. And when they download the data at their change house, or wherever each day, it is there, it belongs to the mining company, or whoever else has statutory access.

Senator ROCKEFELLER. So you're saying that MSHA does not possess that data in a way that it can use it to cause consequence?

Mr. KOHLER. At the moment, they don't. But if this device were used in the mines, there would be no reason why they could not establish policies about how they would access it, and how they would use it. And I would hope that they would do that, so that we could get the full benefit of this technology.

Senator ROCKEFELLER. Thank you.

Senator MURRAY. Thank you very much, Dr. Kohler.

We are now going to turn to our second panel. If they would like to come forward while I introduce them.

We have Dennis O'Dell, he's the Administrator of Health and Safety for the United Mine Workers of America, he worked as an underground coal miner for over 20 years and a member of a mine rescue team.

Steve Bessinger is the Plant Manager for BHP Billiton, San Juan Mine Coal Operation and Waterflow in New Mexico, and has worked in, and managed, mine operations for over 25 years.

Bruce Watzman is the Vice President of Safety and Health for the National Mining Association. Bruce and the NMA were important partners in the development of key health and safety provisions that were included in the MINER Act.

We look forward to hearing from all of you.

And Mr. O'Dell, if you're ready, we'll begin with you.

STATEMENT OF DENNIS O'DELL, ADMINISTRATOR, DEPARTMENT OF HEALTH AND SAFETY, UNITED MINE WORKERS OF AMERICA, FAIRFAX, VIRGINIA

Mr. O'DELL. Thank you, Madame Chair.

Madame Chair and members of the committee, I want to thank you for the opportunity for being able to appear before you today. As the Administrator of Occupational Health and Safety for the United Mine Workers of America, I represent the Union, that for 117 years, has been an unwavering advocate for miner's health and safety.

As you heard Senator Murray say, I personally spent close to 20 years underground as a laborer, performing every task involved associated with mining coal. Twelve years as a Health and Safety rep for the Union, the last two as the Administrator—so this is my life, this is my passion, this is what I believe in. I'm a coal miner in a suit.

I am thankful that Congress has played such a significant role in advancing miner's health and safety, and I'd like to express my appreciation to the leadership of this committee for your efforts to further the health and safety of all miners. Your continued oversight is critical to ensuring miners will go home safely at the end of their shift.

Over a year ago, shortly after the Sago and Alma disasters, many from the mining community testified at various Senate and congressional hearings about the inadequate protection for miner's health and safety. Following the Sago and Alma disasters, and after five more miners were killed on May 20th at the Darby Mine in Kentucky, Congress moved to enact the MINER Act. That law includes several important provisions aimed at helping miners after a mine emergency develops. It is most appropriate for you to consider whether the improvements Congress intended to accomplish through the MINER Act are being realized.

Having said that, my testimony will focus attention on areas that MSHA needs to dedicate additional resources to fully implement the MINER Act, as well as other safety improvements. Some of the inadequacies in implementing the MINER Act may be linked to insufficient resources, however others can be tracked to the decisions made by the Agency in 2001 under then Assistant Secretary for Miner Health and Safety, David Lauriski.

Under Lauriski, there were noticeable shift to a compliance system agency rather than an enforcement agency as they were intended to be, accompanied by withdrawal of many proposed regulations that, had they been passed, would have greatly improved the health and safety protections for miners throughout this Nation. Since Lauriski's departure, the Agency has had to do a great deal of playing catch-up to undo the damages that were put into place under his Administration.

Although some changes have been made, I am sorry to report that MSHA's efforts over the past year will do little to change matters today, if a mine were to experience an explosion like the one at Sago or mine fires like the one at Alma. Indeed, the underground miners would likely fare no better than those who perished over 1 year ago today. Thanks to the MINER Act, we can presume that an incident would be reported within the initial 15 minutes,

however, there is no reason to expect that a sufficient number of mine rescue teams will be able to respond more quickly.

There has been some growth in mine rescue teams over the last year, but overall, very little has been done in either expanding the number, or improving the proximity of, qualified mine rescue teams. So while some miners will be better protected, others won't.

We still have some in the mining community saying that this can't be done. Because a weakened MSHA had allowed a relaxed policy on mine rescue regulations rather than enforce what the Mine Act had said, some small operators, who have, in the past, relied on State teams rather than employ their own mine rescue teams, are still trying to undermine the intent of the MINER Act. It needs to be made clear from this day forward, that all mining operations should employ their own mine rescue teams, so that all miners are protected as intended by the 2006 MINER Act.

In 1969 and again in 1977, Congress mandated that explosion-proof seals or bulkheads be used to isolate abandoned or worked-out areas of the mine from active workings. However, in the years since, MSHA has promulgated regulations regarding seals that are much less protective than what Congress had intended. The standard was further eroded when MSHA approved the use of the type of seals, such as those that failed at Sago. These seals failed catastrophically and we all saw the end result, which was the death of 12 miners.

While we applaud MSHA's recent release of their emergency temporary standard on seals, the UMWA has urged MSHA to require the construction of seals that meet the mandates of Congress and that they are simply to be explosion proof. We have further suggested in our comments to NIOSH's draft report—and intend to pass them on to MSHA—that all newly erected seals from this point forward should be continuously monitored, regardless of what its PSI strength is. This is the only way the operators will know what is exactly happening behind the seals so that miners can afford the 24/7 protection they deserve.

For the most part, there is nothing in place that allows an operator to be able to locate trapped miners beyond the use of a dispatcher. The ability for a dispatcher to know exactly where the miners are at every moment of his or her shift is impossible. This method falls way short of the intent of a tracking device and MSHA needs to readdress how they approved this in their Emergency Response Plans.

Safety chambers are not yet required, nor are safe havens prescribed. Eventhough chambers have been approved by some States, such as my own, in West Virginia, the debate still continues. Almost half the operators do not have a complete approved Emergency Response Plan as required by the MINER Act. Many miners caught in a disaster would likely have 1 additional hour of oxygen, as opposed to early 2006, so please keep in mind that it took more than 40 hours for the first mine rescue team to reach those at Sago. MSHA still allows mine operators to ventilate working sections with belt air and conveyor belts and our underground mines still have the ability to catch fire.

Belt air was prohibited in the 1969 Act and again in 1977. Now, 38 years later, we have a technical study panel on the utilization

of belt air and composition and fire retardant properties of belt materials in underground coal mines. It seems like all this group really needs to do is read what Congress adopted in 1977. It states under 303Y (1),

> "In any coal mine opened after the operative date of this title, the entries used as intake and return air courses shall be separated from belt haulage entries, and each operator of such mine shall limit the velocity of air course through belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries. And to ensure that the air they're in shall contain less than one volume percentum of methane and—'here's the key'—such air shall not be used to ventilate active working places."

We as miners are most appreciative that Congress has worked towards increasing MSHA's budget, so more mine inspectors can inspect mines to ensure compliance with the Mine Act, yet we just recently found out that MSHA is trying to eliminate their support staff and replace them with contractors under the A76 Budget Competitive Outsourcing Initiative.

This would be a huge blow to the support staff of our Nation's inspectors, further crippling their ability to do their job effectively and efficiently. This could also open the door as a tool, next, to replace our inspectors. The use of contractors within MSHA has already been proven to undercut miner's protection when MSHA's hotline, a toll-free number used by miners to call in hazardous complaints, was staffed with contractors.

Senator MURRAY. Mr. O'Dell, if you could summarize the last of your comment. Sir, we want to make sure we have time for questions.

Mr. O'DELL. Yes, Ma'am.

We need to take this a step further, if I may. There's a few things that I'd like to list that we need to move on and address. Miners are still dying from Black Lung. The use of the device you heard Dr. Kohler talk about, Personal Dust Monitor, could be very helpful, but there's many obstacles that need to be overcome before this is implemented into the mining industry. With the development of PDM, we also need to look at a new standard for dust and silica. Miners should be provided with gas detectors so that they'll know the atmosphere they're working in. Atmospheric monitors should be required in the mines, so that miners know what's going on in their surrounding areas.

We need to push new developments of the SCSRs. We need to actively pursue improved communication systems, stronger ventilation controls, a new rock dust standard, equipment manufacturers need to be held more to how they build this equipment so that they're less noisy, so the hearing loss can go down, and proximity devices should be required.

This would be a good start to bring us up to where we need to be in the 21st Century. Miners deserve these kind of protections and we hope that, with your help, we can get these kind of protections. We expect MSHA to demonstrate a commitment to enforcing the MINER Act and we look forward to working with everybody in the mining industry to make this happen.

Thank you and I'll be happy to answer any questions.

[The prepared statement of Mr. O'Dell follows:]

PREPARED STATEMENT OF DENNIS O'DELL

Thank you for allowing me this opportunity to appear before your committee. As Administrator of Occupational Health and Safety for the United Mine Workers of America ("UMWA"), I represent the union that for 117 years has been an unwavering advocate for miners' health and safety.

Congress has played a significant role in advancing miners' health and safety and I would like to express my appreciation to the leadership of this committee for your efforts to further protect the health and safety of all miners. Your continued oversight is critical to ensuring miners will go home safely at the end of their shift.

Over a year ago, shortly after the Sago and Alma disasters, many from the mining community testified at various Senate and Congressional hearings about inadequate protection for miners' health and safety. Following the Sago and Alma disasters and after five more miners were killed on May 20, 2006 at the Darby Mine in Kentucky, Congress moved to enact the MINER Act. That law includes several important provisions aimed at helping miners after a mine emergency develops. It is most appropriate for you to consider whether the improvements Congress intended to accomplish through the MINER Act are being realized. The Union supports MSHA's efforts to require substantially more oxygen for every miner. The emergency mine evacuation rule also contains a number of important improvements. Having said that, my testimony will focus attention on areas that MSHA needs to dedicate additional resources to fully implement the MINER Act.

Some of the inadequacies in implementing the MINER Act may be linked to insufficient resources. However, others can be tracked to decisions made by the Agency. In 2001, then Assistant Secretary for Mine Health and Safety David Lauriski told members of the National Mining Association that MSHA would "collaborate more with mine operators on regulatory initiatives" and become "less confrontational with mine operators in an effort to provide companies with better compliance assistance." At a meeting with mine operators in Hindman, Kentucky, he bragged about his diminutive regulatory agenda. He noted, "If you've seen it you noticed it's quite a bit shorter than some past agendas." These policy statements were accompanied by a withdrawal of many proposed regulations by MSHA and a noticeable shift to compliance assistance. These compliance assistance programs divert precious resources away from enforcement. Perhaps most tragically and in many cases, MSHA has ignored the mandate of Congress by adopting regulations and policies that place miners at greater risk.

MINE INSPECTORS/MINE INSPECTIONS

The Agency is experiencing great difficulty in fulfilling the mandatory inspections required under the Mine Act. The Union is convinced that the hiring and training of more MSHA inspectors must be a top and continuing priority. The Agency must have a full complement of properly trained personnel if it is to perform its primary job of enforcing the Mine Act. The ranks of the inspectors have been diminished over the years and we can expect further reductions as more of MSHA's long-time inspectors leave the profession as they reach retirement age. GAO identified this anticipated problem in 2003, yet GAO reports again in 2007 that MSHA still does not have a plan in place to address the anticipated retirements of its inspectors. Inspector positions must be filled by hiring qualified individuals from all segments of the industry, including rank and file miners. Current and new inspectors must all be outfitted with state-of-the-art equipment for personal protection and to perform their inspection duties. Sufficient monies must be allocated to ensure this equipment is readily available to these inspectors.

As the number of inspectors have decreased, MSHA's field office specialists including ventilation specialists and its electrical and roof control support staff have been forced to carry out routine mine inspections. These specialists must be returned to their areas of expertise. The only way to accomplish this is to hire an adequate number of inspectors that will permit the specialists to focus on the job they are trained to do. In addition, the Agency must move immediately to train a sufficient number of inspectors to perform these technical tasks in the future.

Congress must also ensure that funding levels at the Mine Academy in Beckley, WV remain sufficient to meet future training needs for mine inspectors. This facility is used to train mine inspectors and also offers comprehensive training for miners and other health and safety experts.

SEALS

In 1969 and again in 1977 Congress mandated that "explosion proof seals or bulkheads" be used to isolate abandoned or worked out areas of the mine from active

workings. However, in the years since, MSHA has promulgated regulations regarding seals that are much less protective than what Congress mandated. The standard was further eroded when MSHA approved the use of Omega Block type seals such as those that were used at Sago. These Omega Block seals catastrophically failed as a result of the explosion at Sago and contributed to the deaths of all 12 miners.

While we applaud MSHA's recent release of their Emergency Temporary Standard on seals, the UMWA urges MSHA to require the construction of seals that meet the mandates of Congress in that they are to be explosion proof. We have further suggested in our comments to NIOSH's draft report that all newly erected seals from this point forward be continuously monitored regardless of its psi strength.

REGULATIONS

The UMWA believes that MSHA should adopt an aggressive regulatory agenda to address important issues in addition to those contained in the MINER Act, including:

1. Improved Atmospheric Monitoring Systems
2. Develop a Nationwide Emergency Communication System
3. Revise MSHA's Approval and Certification Process for Equipment Approval
4. Occupational Exposure to Coal Mine Dust (lowering exposure limits)
5. Collection of Civil Penalties (mandatory mine closures for non-payment)
6. Air Quality Chemical Substances and Respiratory Protection Standards (update personal exposure limits)
7. Surface Haulage (truck, haul road, train and loadout safety)
8. Respirable Crystalline Silica Standard (reducing quartz standard)
9. Requirements for Approval of Flame Resistant Conveyor Belts
10. Confined Spaces (tight quartered work areas)
11. Training and Retraining of Miners (revision of Part 48)
12. Surge and Storage Piles (dozer/feeder safety surface)
13. Escapeways and Refuges
14. Accident Investigation Hearing Procedures (make them public)
15. Verification of Surface Coal Mine Dust Control Plans
16. Continuous Monitoring of Respirable Coal Mine Dust in Underground Coal Mines
17. Modify Conferencing Process (Appeals of Citations)
18. Underground Coal Mining, Self-Contained Self-Rescuer Service Life Approval and Training

RECORDING FATAL ACCIDENTS

Recently MSHA issued new guidelines for determining what constitutes a mine-related fatality. The "Fatal Injury Guideline Matrix" narrows the scope of what the Agency will define as a fatal accident chargeable to the mine operator. This will allow the Agency to report numbers that are artificially low and possibly skew the actual health and safety record of the mine and the industry. In addition, fatals not listed as mine-related will not get the same scrutiny as a chargeable accident. Without the formal investigation process, lessons learned will not be available to prevent similar events in the future.

The Union also disagrees with the committee established by the Agency to review deaths where chargeability is in question. The committee is made up of upper-level MSHA employees and not open to other agencies, organizations or the public. This type of structure does not lend itself to a fair unbiased review of the situation.

IMPLEMENTATION OF THE MINER ACT

In the MINER Act, Congress mandated timelines for its implementation. In some cases MSHA has failed to meet these deadlines. The Union urges Congress to allocate adequate funding to MSHA so it can fully implement this act within the time frames set by Congress.

The *Emergency Mine Evacuation Rule*, which is separate from the MINER Act but ties into the self-contained self-rescuers (SCSRs) requirements, was finalized and made effective December 8, 2006. However, miners working underground today do not have all the protections that the Rule addresses. MSHA deems the operator to be in compliance with the Rule if it has placed an order for additional SCSRs. Although the Rule requires increased availability and storage of SCSRs, there is a backlog of orders for these life-sustaining units. The Union is extremely frustrated that more than a year after the Sago and Alma disasters many miners only have 1 additional hour of oxygen. In light of this backlog, the Union supports MSHA's approach to make the additional oxygen units equally available to all miners. In re-

ality, it will still take a number of years before miners receive the protections mandated by Congress. Miners cannot wait for another mine disaster to occur to drive new technology; therefore, the Union strongly urges the development and approval of the next generation SCSR.

Moreover, the finality of this emergency response and evacuation rule is somewhat uncertain as the National Mining Association (NMA) filed a court challenge. The Union is not certain which aspects of the rule NMA is contesting, but it is certain that such legal maneuvers delays the protections Congress mandated only last year.

Congress understood the importance of requiring that mine operators have comprehensive emergency response plans at all their operations. The MINER Act permitted operators a 60-day period to prepare these plans and submit them to the Agency for review and approval. However, many of the mine emergency response plans that operators submitted were grossly inadequate and not worthy of approval. We are now beyond the deadline established by Congress. While we commend MSHA for not approving these faulty plans, we do believe it must be more aggressive and apply more pressure on the operators to get these plans completed. Unless MSHA takes decisive action and resolves all the remaining issues, miners will not get the mine emergency response improvements that Congress intended.

Further, the mine emergency response plans are to be reviewed and re-approved by MSHA every 6 months. We are already beyond the original plan due date. If those first plans are not yet approved and fully implemented, how can we expect MSHA to handle these semi-annual reviews? Perhaps MSHA needs more manpower to handle this task, but whatever the answer, until every operation has an approved plan in place, miners are not getting the protections Congress intended.

Very little has changed in the last year concerning the ability to communicate with and locate trapped miners. While we have learned more about this technology and understand that much is available, very few operators have taken advantage of it. Communication systems and tracking devices are areas that MSHA must pursue more aggressively. Current communication and tracking technology, including one-way text messaging and two-way wireless systems, some of which are available now, must be immediately installed in all mines. Any system that can increase the ability for miners to escape a mine emergency, even if it is limited in scope, must be utilized. The Federal Government, through NIOSH and MSHA, must fund and direct continued studies and research to develop the next generation of tracking and communication devices. As this newer technology becomes available, mine operators must be required to upgrade existing systems at all its operations.

We are also troubled by MSHA's failure to undertake action to facilitate the creation and training of additional mine rescue teams. Congress in the MINER Act clearly outlined its intent regarding the need for additional mine rescue teams. In addition, the language clearly defines how this is to be applied at both large and small mines. While Congress allowed MSHA 18 months in which to prepare, finalize, and give effect to rules that increase and enhance mine rescue team requirements, so far MSHA has not adequately addressed this need. The need is real and it is immediate. In the not-too-distant future MSHA will need additional funding to certify that mine rescue teams are qualified as contemplated by the MINER Act.

Over the past 20 years MSHA and some operators have weakened the intent of the current regulations regarding mine rescue protections. The existing mine rescue team structure is spread too thin. It takes a lot of time and much practice for any mine rescue team to function well. The UMWA has training facilities and is willing to provide mine rescue training and first responder training if we receive the necessary funding. Miners cannot afford to wait any longer for the training of new teams to begin.

COLLECTION OF CIVIL PENALTIES

In the MINER Act, Congress charged MSHA with revising and enhancing its penalty structure. The Agency needs to do a much better job of tracking and collecting the fines it imposes and it should escalate the pressure when an operator refuses to pay a final penalty.

Last year MSHA blamed computer problems on its inability to track fines; we understand that it still faces some technological challenges. If that is the case, then MSHA needs to fix the problem. When fines go unpaid it not only gives an unfair competitive advantage to the delinquent operator, but that operator's disregard for the mine health and safety laws and regulations imposes excessive risk on its employees. Moreover, the fine system itself is not working well. Indeed, GAO reported that almost half of the fines that underground coal operators challenge are compromised, and that of those contested the fine is typically cut by about 50 percent!

To the extent that MSHA takes the position that it cannot close an operation for having substantial unpaid fines, we submit that Congress should grant the Agency such authority. MSHA's top personnel claim that if it had that authority the Agency would exercise it to close operators who refuse to pay their fines. We would welcome that.

MSHA HOTLINE

The Union has complained for some time that the current hotline system miners use to report hazardous conditions is ineffective. Recently, a member of the UMWA called the 800 number listed on MSHA's Web site to report a problem at the mine where he worked and was frustrated by problems he encountered. The individual who answered the call, a contract employee, did not have any knowledge of mining, making it extremely difficult for the miner to convey the message. Further, the individual at the call center was not remotely familiar with MSHA's District structure and was therefore uncertain which office should receive the complaint.

The Union has stressed on many occasions that the MSHA hotline should be staffed 24 hours a day, 7 days a week by MSHA personnel with an understanding of the mining industry and the Agency. The current practice of contracting this work out to call centers lessens miners' health and safety.

BELT-AIR

In keeping with the mandates of Congress in the 1969 Coal Act and the 1977 Mine Act, which strictly prohibits the use of belt-air to ventilate working places, the Union has historically been opposed to the use of belt-air to ventilate the working places. The 2006 Alma disaster is a reminder that there is no safe way to ventilate working sections using belt-air. This mine fire was intensified by air from the belt entry and the contaminated air was dumped onto miners working near-by. In addition, conveyor belts used in the mining industry must be made of non-flammable material.

In the MINER Act, Congress directed that there be created a Technical Study Panel to provide independent scientific and engineering review and recommendations with respect to belt air and belt materials. The Study Panel is then to issue a report to the Secretaries of Labor and Health and Human Services, as well as the Senate Committee on Health, Education, Labor, and Pensions, and the House Committee on Education and Labor. While this Technical Study Panel has been constituted and has begun meeting, we harbor reservations about its administration. Congress was silent as to its administration, but MSHA staff is providing the support personnel. If its first meetings are any indication, MSHA seems more invested in defending the belt air decisions it has already made than simply servicing the Study Panel. Congress assigned this Study Panel to offer an "independent" review and recommendations and we hope it can overcome MSHA's bias in favor of belt air.

FUNDING FOR ADDITIONAL PROGRAMS AND HEALTH AND SAFETY PROTECTIONS

The Union would urge Congress to adequately fund other agencies and programs that advance the Health and Safety of the Nation's miners. These include:

- Pittsburgh Research Center
- Lake Lynn Facility
- Appalachian Laboratory for Occupational Health and Safety in Morgantown, WV
- Approval and Certification Center
- Personal Dust Monitors (PDM)
- Colorado School of Mines

CONCLUSION

Although some changes have been made, I am sorry to report that MSHA's efforts over the past year would do little to change matters today if a mine were to experience an explosion like the one at Sago, or a mine fire like the one at Alma; indeed the underground miners would likely fair no better than those who perished over 1 year ago. Thanks to the MINER Act, we can presume that any incident would be reported within the initial 15 minutes. However, there is no reason to expect that a sufficient number of mine rescue teams would be able to respond more quickly. There has been some growth in mine rescue teams over the last year but very little overall progress, in either expanding the number or improving the proximity of qualified mine rescue teams has taken place across the board. So while some miners will be better protected, others won't. We still have some in the mining community

saying that it can't be done. Because a weakened MSHA had allowed a relaxed policy on mine rescue regulations rather than enforce the Mine Act, some small operators who have in the past, relied on State teams rather than employ their own, are still trying to undermine the intent of the MINER Act. It needs to be made clear from this day forward that all mining operations will employee their own mine rescue teams so that all miners are protected as intended by the 2006 MINER Act.

For the most part there is nothing in place that allows an operator to be able to locate trapped miners beyond the use of a dispatcher. The ability for a dispatcher to know exactly where the miners are at every moment of his or her shift is impossible. This approved method falls way short of the intent of a tracking device and MSHA needs to re-address the approved Emergency Response Plans to fix this.

Safety chambers are not yet required, nor are safe havens prescribed. Eventhough chambers have been approved by some States such as West Virginia, the debate continues. Almost half of the operators do not have a complete approved emergency response plan as required by the MINER Act. Many miners caught in a disaster would likely have 1 additional hour of oxygen as opposed to early 2006, but please remember that it took more than 40 hours for the first mine rescue teams to reach the miners at Sago.

MSHA still allows mine operators to ventilate working sections with belt-air, and conveyor belts in our underground mines still have the ability to catch fire. The use of belt air was prohibited in the Mine Act. Thirty-eight years later we have a Technical Study Panel on the Utilization of Belt Air and the Composition and Fire Retardant Properties of Belt Materials in Underground Coal Mining. Seems like all this group needs to do is read what Congress adopted in 1969 and again in 1977. It states under 303(y) (1):

> "In any coal mine opened after the operative date of this title, the entries used as intake and return aircourses shall be separated from belt haulage entries, and each operator of such mine shall limit the velocity of the air coursed through belt haulage entries to the amount necessary to provide an adequate supply of oxygen in such entries, and to insure that the air therein shall contain less than 1.0 volume per centum of methane, and *such air shall not be used to ventilate active working places*."

We are most appreciative that Congress has worked towards increasing MSHA's budget so more mine inspectors can inspect mines to ensure compliance with the Mine Act, yet we just recently found out that MSHA is trying to eliminate their secretarial staff and replace them with contractors under the A–76 Budget Competitive Outsourcing Initiative. This would be a huge blow to the support staff of our Nations inspectors further crippling their ability to do their job effectively and efficiently. This could also open the door as a tool to next replace our Inspectors. The use of contractors within MSHA has already been proven to undercut miners protection when the MSHA Hotline, a toll free number used by miners to call in hazardous conditions or complaints, was staffed with contractors. Miners' calls never received the proper attention. Calls went unanswered. Unsafe conditions at the mine went un-addressed, and to this day, miners still continue to have problems with the Hotline call center.

1. We also need to take the next step in being more proactive in our approach to miners protection. Miners need to have the best tools available, not only from a production standpoint, but better health protections as well. Miners are still dying from Black Lung. The use of a new device called a Personal Dust Monitor can be a very helpful tool in keeping miners from being overexposed to high levels of dust concentrations.

2. With the development of the PDM we also need to explore a new dust standard that would reduce the miners level of exposure to coal dust and silica.

3. Miners should be provided multi-gas detectors to alert them to the mine atmosphere they are working in.

4. Atmospheric monitoring systems should be mandated at all mines to alert miners if any dangers occur throughout the entire mine, not just in the area they are working.

5. We need to push the development of a new self-rescuer that will last longer and be more user-friendly when switching from one to another if necessary during escape.

6. We need to actively pursue improved communication systems. I was made aware this week that wireless technology does exist but hasn't been explored to the extent it should.

7. Stronger ventilation controls should be required that are used to separate our fresh air escapeways that miners have to travel in the event of a mine fire.

8. A new rock dust standard should be put in place that would decrease the amount of coal dust that is currently allowed to accumulate on the mine roof, ribs, and floor.

9. Equipment manufacturers should be made to design less noisy mining machinery, which would help reduce hearing loss.

This would be a good start. If we do these things then maybe we can bring our safety standards up to the 21st century. There are other recommendations we have listed in our Sago report, which has already been made available to you. The report can also be seen on our Web site at UMWA.org.

We expect MSHA to demonstrate a commitment to enforcing the Mine Act and to improving miners' health and safety so that our industry will never again experience another mine disaster like Sago or Alma. New technology is progressing on a daily basis and the UMWA urges MSHA to require mine operators to employ these technologies as they become available. This will greatly improve miners health and safety protections, which is long overdue.

Again thank you and I will be happy to answer any questions that you may have.

Senator MURRAY. Thank you very much, Mr. O'Dell.

Dr. Bessinger.

STATEMENT OF S.L. BESSINGER, Ph.D., PE, ENGINEERING MANAGER, BHP BILLITON, SAN JUAN COAL COMPANY, WATERFLOW, NEW MEXICO

Mr. BESSINGER. Good morning, Madame Chair and distinguished members of the subcommittee. My name is Dr. Steve Bessinger and I'm a mining engineer and the Engineering Manager for BHP Billiton, San Juan Coal Company in New Mexico.

On behalf of my company, thank you for inviting us to participate in the subcommittee's oversight hearing concerning the MINER Act. We hope that your invitation to participate is in recognition of our tireless efforts on safety at San Juan Mine.

Our total commitment to safe production can be summarized by a single concept, and that is zero harm. This is a principle that each of us at BHP Billiton live by every day. We believe that our safety program is among the strongest in the industry. However, we work to improve our performance on a continuing basis.

San Juan Mine is a part of BHP Billiton's New Mexico coal operations. BHP Billiton is the world's largest diversified natural resources company and the New Mexico operations are composed of the Navajo Mine, a surface coal mine located on the Navajo Reservation, and the San Juan Mine, an underground longwall operation. Here is a picture of what our longwall equipment looks like installed underground.

We employ over 1,000 people, of whom 65 percent are Native Americans. Our mines are essential to the electricity supply of California, Arizona, New Mexico, Utah, and Colorado. Because of BHP Billiton's focused risk assessment approach to safety, we were already doing most of what the MINER Act requires. Prior to start-up of the underground mine at San Juan, we performed an extensive, site-specific risk assessment, which identified risks unique to our mine and some common to other coal mines.

In the proactive manner, mitigation strategies were then developed and implemented to manage the risks consistent with our zero-harm objective. Nevertheless, it's been a significant challenge to meet the requirements of the act in the timeframe provided, not to mention the associated cost.

In some cases, technology has been a challenge, such as the mandate for wireless, through-the-earth communications, and personnel

tracking. Technology is adapting and developing, but is relatively slow because the incentive to developers is limited. With only 466 operating underground coal mines in the country, the market for such technology is small compared to other markets where technology develops quickly, such as mobile phone and personal computing technology. The technology developed for mining is also expensive because the embedded development cost must be covered over a relatively small number of units, compared to high-volume markets.

One of the best and fundamental requirements of the MINER Act are the emergency response plans, which we call ERPs. These require us to provide for the evacuation of miners should a mine emergency occur and provide for sustenance of miners if they're unable to escape. Here's a photo of one of our permanent underground escape shelters currently existing in our mine. After 8 months of diligent work, we're proud to tell you that our ERP has been approved and we believe it to be the first in the Nation.

The theme common of the MINER Act is the need to stimulate research and development for mining industry needs. More needs exist, including the needs for research and development related to monitoring of mine atmospheres, prevention of gas explosions, mine seals, roof control, next generation self-rescuers, and wireless communication technology.

In conclusion, I'd like to invite the subcommittee members to visit BHP Billiton's New Mexico operations. Our thousand-strong team would be glad to host you on visits to San Juan Navajo Mine. Thank you for the opportunity to participate in this hearing.

[The prepared statement of Dr. Bessinger follows:]

PREPARED STATEMENT OF S. L. BESSINGER, PH.D., P.E.

INTRODUCTION

Good morning Madame Chair and distinguished members of the subcommittee. My name is Steve Bessinger and I am the Engineering Manager for San Juan Coal Company, a 100-percent-owned subsidiary of BHP Billiton. On behalf of BHP Billiton, thank you for inviting us to participate in the subcommittee's oversight hearing concerning the Mine Improvement and New Emergency Response Act of 2006 or the "MINER Act."

To begin, we strongly support the goals and purposes of the MINER Act. At the heart of the new law, in our view, is the requirement for a mine-specific accident response plan. It has been no small task to meet the immediate mandates of those requirements, and we have more challenges awaiting us over the next several years as the milestone dates of the act arise (for example the wireless communication and tracking requirements).

For us the other most important thrust of the MINER Act is a strengthening of the Federal Government's capabilities regarding mine safety research. This re-invigorated research program should help the industry meet both MINER Act research needs as well as other mine safety problems. Our statement addresses these two critical issues in more detail below.

An overriding commitment to the safety of our employees and contractors is fundamental to BHP Billiton's strategy and is deployed through all its operations. For many years we have worked tirelessly towards our goals and to address the challenges presented in this area. Before its enactment on June 15, 2006, our safety program already incorporated a number of the MINER Act's principles. However, although the MINER Act contains much that is familiar to us, its requirements have presented, and continue to pose significant demands. We believe that our company is on schedule with MINER Act compliance.

BHP BILLITON SAN JUAN UNDERGROUND COAL MINE

By way of brief introduction, the San Juan Underground Coal Mine is part of BHP Billiton's New Mexico Coal Operations. BHP Billiton is the world's largest diversified natural resources company. We have more than 100 operations in approximately 25 countries throughout North and South America, Africa, Asia, and Australia. Around 7 percent, or 2,660 of our employees globally are located in North America, with the majority of these within the Unites States. As well as our coal operations in New Mexico, we have petroleum activities in the Gulf of Mexico, the headquarters for our global petroleum business is located in Houston, Texas, and part of our copper business operates in Arizona.

Our New Mexico Coal Operations are located in the Four Corners area of northwestern New Mexico. We currently have two operating coal mines: (1) the Navajo Mine, a large surface coal mine located within the boundaries of the Navajo Reservation; and (2) the San Juan Mine, an underground longwall operation. About 65 percent of our salaried and hourly workforce of 1,000 employees is comprised of Native Americans. At both mines our miners are represented by Local 953 of the International Union of Operating Engineers. The two mines produced approximately 16.5 million tons of coal in 2006. The Navajo Mine is the sole supplier of fuel to the Four Corners Generating Station operated by Arizona Public Service ("APS"); and the San Juan Mine is the sole supplier of fuel for the San Juan Generating Station operated by Public Service of New Mexico ("PNM"). These power plants furnish electricity to New Mexico, Colorado, Utah, Arizona, and California. Our New Mexico Operations had a 2006 payroll of $77 million, and we purchased equipment, services, materials, and supplies worth $156 million. In 2006, our New Mexico Operations paid State, local, Tribal and Federal taxes and royalties totaling almost $118 million, plus State and Federal payroll income taxes and State Corporate Income tax.

Historically the San Juan Mine had been a surface coal mine, but as its surface mineable reserves became depleted we began to develop an underground longwall mine in 2000. Underground mining commenced in February 2001 and full production capacity was reached in early 2004. There are sufficient coal reserves to meet our contractual commitments to at least 2017. Because of a scarcity of experienced underground and surface miners, it was necessary for us to recruit and train a workforce of nearly 80 percent inexperienced miners for the underground workforce. For example, as you can see from the attached picture (Attachment 1), we actually constructed a portion of the longwall machine on the surface, about one fifth of its installed size, a total of three football fields in length when complete. We trained our miners on it until they became comfortable with their tasks. As the Senators may know, the longwall method of mining is the safest and most productive method of underground coal mining techniques. Longwall mining is highly productive because of its focus on a systems approach to mining and the use of advanced technology (See the photos in Attachments 2 and 3). A unique safety aspect of our mine amongst other U.S. mines deserves a brief explanation: that is, we use what is called a bleederless longwall ventilation system as a control to suppress the natural tendency of our coal seam to spontaneously combust. This includes the use of a nitrogen injection system to manage oxygen content to safe levels. This helps to minimize the risk of an explosion or a spontaneous combustion heating event. The spontaneous combustion characteristic of our coal is a relatively unusual circumstance, not found at most underground coal mines in the United States.

BHP BILLITON SAN JUAN COAL COMPANY'S SAFETY AND HEALTH PROGRAM

From the outset of the Mine's development, our approach to safety and health has been grounded upon a systematic risk-based analysis program focused on the specific characteristics of our mine. This is consistent with the 2006 recommendations of the National Mining Association's Mine Safety Technology and Training Commission, chaired by Professor Larry Grayson. BHP Billiton fully supports those recommendations. More specifically, we implemented a program comprised of detailed safety process components and a safety process matrix to address identified risks. It involves all of our hourly and salaried employees, as well as contract miners and equipment service representatives. This embraces BHP Billiton's Fatal Risk Control Protocols that are mandatory at each site around the world. Each operation within BHP Billiton has access to best practices that have been tested, modified and documented in more than 100 operations within the Group. But the key is that this common methodology also allows us to identify risks posed by each mine and manage those specifically, rather than manage every mine the same. Some of our success might also be attributed to our behavioral-based safety programs amongst management, employees and contractors. One example was our Stop-Look-Assess-Manage

("SLAM") process which was recently embraced by MSHA. Our bottom line is that at any BHP Billiton site, we seek to create a mindset and an environment where people believe it is possible to work injury-free and everyone understands they are empowered to manage safe production by stopping work at any time they feel the activity is unsafe. This occurs regardless of where they are in the world, what role they undertake, or in which business they work. We call this objective Zero Harm.

Our program at the San Juan Mine is designed to ensure we comply with the requirements of the Federal Mine Safety and Health Act of 1977, as amended by the MINER Act. But rather than just targeting compliance, we bring known best practices to bear to manage our assessed risks. San Juan's personnel engage in regular dialogue with our BHP Billiton colleagues and other experts in the United States, Australia, South Africa and around the world.

When all is said and done, we are very pleased there have been no fatalities in the history of the San Juan Coal Company. While our injury rate for 2006 was 3.26 versus the national average of 4.88, we will not be satisfied with anything less than a continuation of our first quarter 2007 results which were 0.00. We recognize this is a journey and not a destination. In all of our operations it is critical that we are vigilant in identifying new, emerging or changing risks, and managing those risks in a way that is appropriate for each site. This must continue to be the case because there is always room for further improvement. Please let me take this opportunity to invite you, Madame Chair, and members of the subcommittee to visit our mines. All 1,000 members of our New Mexico Coal team are proud of our operations and we would be very pleased to provide you with a tour of our New Mexico Operations.

BHP BILLITON SUPPORTS THE MINE SAFETY AND HEALTH ACTIVITIES OF THE NATIONAL MINING ASSOCIATION AND THE MINE SAFETY AND HEALTH ADMINISTRATION

BHP Billiton is a member of the National Mining Association ("NMA"). Like NMA, we are strong supporters of the goals and intent of the MINER Act. We work closely with MSHA on the ground as a stakeholder in our safety process. Indeed, we engage in healthy debate and consultation with MSHA on various issues, many of which are above and beyond compliance issues. In this way MSHA is an important partner in our success.

THE MINER ACT

We support the MINER Act's spotlight on mine emergency preparedness. In fact, because of BHP Billiton's focused risk assessment approach to safety, we were already carrying out a good deal of what the MINER Act now requires. Prior to the MINER Act, we had constructed three escape shelters in our underground workings. Their purpose is to facilitate the coordinated evacuation of miners or to sustain them if they become trapped underground. The shelters are supplied with fresh air from the surface by a bore hole, ventilated at a minimum rate of 90 CFM; and they are equipped with food, water, first aid supplies, and a separate communication system to the surface through the bore hole. Photos of these escape shelters are attached as Attachments 4, 5 and 6 to my statement. As for self contained self rescuers ("SCSRs"), prior to the MINER Act we had 475 1-hour devices in our system to cover a typical work shift having approximately 50 miners underground. We have been actively involved with MSHA and NIOSH in the approval of the use of Self Contained Breathing Apparatus "SCBA" as an alternative to existing approved escape breathing devices, to be delivered mid-2007. San Juan has also used the Personal Emergency Device, (PED) and three other communication systems underground for several years. Our approach to the use of escape shelters, communications systems and SCSRs provided us with a running start to compliance with the MINER Act requirements for a written accident response plan or emergency response plan ("ERP"), as we discuss below.

BHP BILLITON SAN JUAN'S WRITTEN ACCIDENT RESPONSE PLAN OR EMERGENCY RESPONSE PLAN ("ERP")

To begin, the MINER Act requires that approved ERPs shall——

- Afford miners a level of safety protection at least consistent with existing law;
- Reflect the most recent credible scientific research;
- Be technologically feasible;
- Make use of current commercially available technology; and
- Account for the specific physical characteristics of the particular mine.

This last criterion especially is an endorsement of the mine specific risk assessment used by BHP Billiton.

We are proud to report to you that as of April 16, 2007, our San Juan Mine has an MSHA-approved ERP. We understand that this was the first approved ERP in the Nation. The ERP approval process took about 8 months from start to finish. As the subcommittee knows, approved ERPs must be reviewed by MSHA at least every 6 months, and no later than mid-2009 every ERP must provide for post-accident communications between underground and surface personnel via a wireless two-way medium, as well as provide for an electronic tracking system permitting surface personnel to determine the location of any persons trapped underground. These are daunting tasks given present technology.

For now, however, our approved ERP includes: a redundant means of communication with the surface for persons underground; a tracking system that allows us to know the current or the immediately pre-accident location of all underground personnel; sufficient caches of SCSRs for the evacuation and escape of our underground workforce; emergency supplies of breathable air for individuals trapped underground sufficient to maintain them for a sustained period of time; post-accident lifelines; and the other required components of ERPs.

With particular regard to post-accident breathable air for trapped miners, we have constructed two more permanent escape shelters; and we are in the process of purchasing four pre-fabricated portable refuge chambers (one of the six varieties of chambers approved by the State of West Virginia). We appreciate the opportunity to be involved in the development of the NIOSH refuge chamber study.

MINER ACT STRENGTHENING OF MINING RESEARCH ACTIVITIES

As noted at the beginning of this statement, we are very pleased that the MINER Act has strengthened the Nation's mining research capabilities through creation and funding of a permanent Office of Mine Safety and Health within NIOSH. Madame Chair, and members of the subcommittee, in the long-term, this will be one of the most important life-saving accomplishments of the MINER Act. Recent events highlight the need for increased and sustained funding to support basic research, and development of technology that the industry needs to continue to improve the safety of our industry. The MINER Act is a start in the revival of this key component of what is now recognized to be a strategically important and economically critical industry for our country's safety, security, and well-being.

Early this month, a BHP Billiton representative was present at the meeting of the statutorily established Mine Safety and Health Research Advisory Committee (MSHRAC) in Pittsburgh, Pennsylvania. That Advisory Committee is charged pursuant to Section 102 of the Federal Mine Safety and Health Act of 1977, with advising both MSHA and NIOSH on matters involving mine safety and health research. We were pleased that MSHRAC heard and discussed excellent presentations from NIOSH about its MINER Act research activities dealing with communications and tracking, refuge chambers, mine seals, behavioral research on escape, development of improved SCSRs, and other important projects. In short, progress is being made in mine safety research as a result of the MINER Act.

SEALING OF ABANDONED AREAS IN UNDERGROUND COAL MINES

The MINER Act Section 10 requires MSHA to raise the required strength level of materials sealing off abandoned areas in underground coal mines.

We understand that MSHA will be publishing shortly an "emergency temporary standard," on mine seals. We support this process, but have filed a mine specific Petition for modification to the Agency's current standards for the construction of alternative mine seals in accordance with our risk-based approach.

We filed this Petition because we strongly believe that the application of the current standard presents a diminution of safety for our miners. A number of 2006 safety incidents were a direct result of materials handling. In lieu thereof, we have offered an alternative method that will at all times provide an equal or higher degree of safety as that provided by the existing standard. This alternative is an upgraded seal design and construction procedure for MSHA's consideration, which includes a procedure for monitoring and sampling of the atmospheres behind our seals. This procedure includes an action plan which, when necessary would require evacuation of the mine. We sincerely hope that publication of the emergency temporary standard will result in MSHA approval of our proposed system of construction and monitoring of our seals.

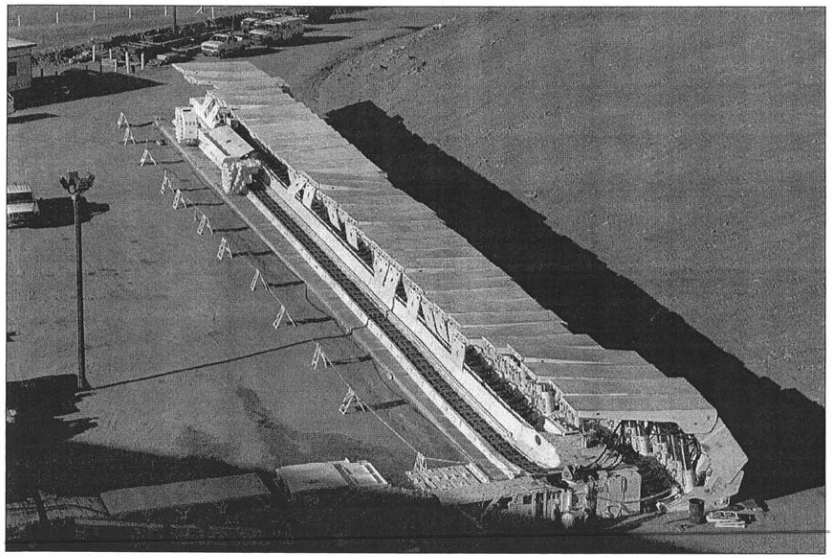
CONCLUSION

In closing, we very much appreciate having been invited to participate in this hearing. An overriding commitment to the safety of our employees and contractors is fundamental to BHP Billiton's strategy and our own personal dedication to safety.

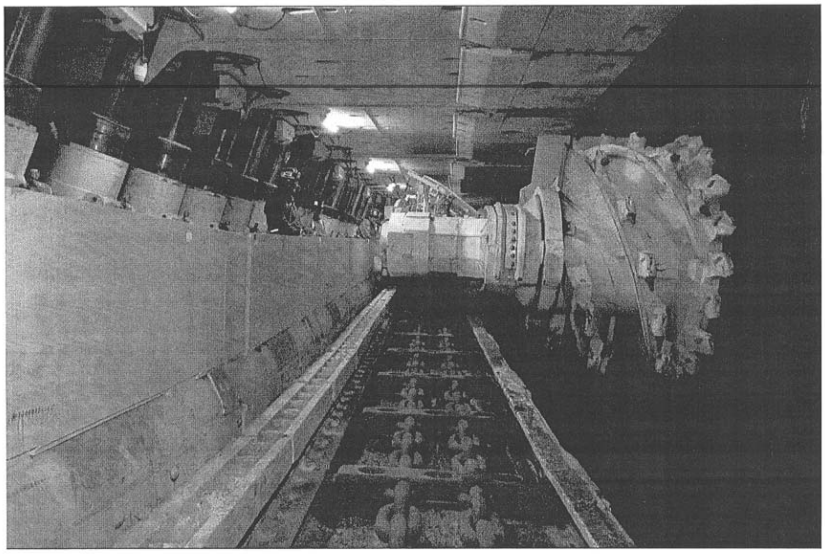
Our initiatives towards Zero Harm are built upon our risk management approach, Fatal Risk Control Protocols, our adoption of best practices world-wide, and our use of behavioral-based safety, all focused to our site-specific circumstances.

We support the spirit and goals of the MINER Act and the potential benefits that will be realized from increased funding into mining research and development.

Thank you again for your interest in our miners' safety. BHP Billiton stands ready and willing to advise and assist you in this critically important issue and we look forward to you visiting us in New Mexico.



Attachment 1



Attachment 2

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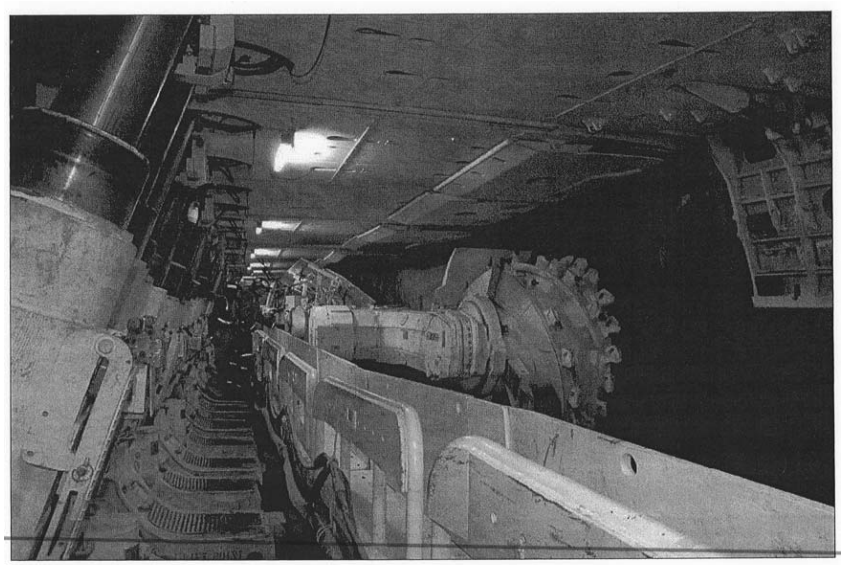

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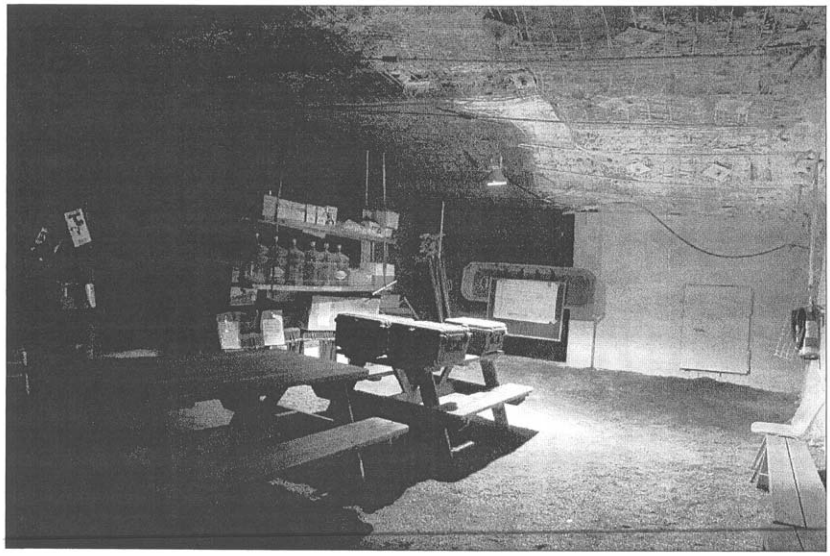
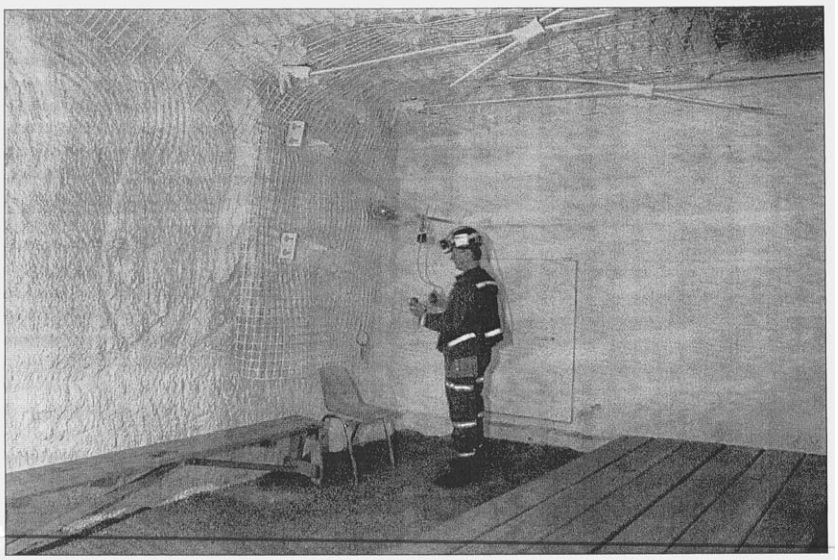


Attachment 4

35852-3.eps 35852-4.eps



Attachment 5

Attachment 6

Senator MURRAY. Thank you, Dr. Bessinger.
Mr. Watzman.

35852-5.eps 35852-6.eps

STATEMENT OF BRUCE WATZMAN, VICE PRESIDENT, SAFETY, HEALTH & HUMAN RESOURCES, NATIONAL MINING ASSOCIATION, WASHINGTON, DC.

Mr. WATZMAN. Thank you Madame Chair, Senator Isakson, and Senator Rockefeller.

And especially, thank you Senator Rockefeller, for your continued interest in this issue, your continued interest in the use of coal as an energy source for our country, and the health of the industry.

We appreciate the opportunity to appear before you to talk about the industry's actions to implement the MINER Act, the challenges we face, our views on enhancing mine safety research and the role of technology, and the findings of the independent Mine Safety Technology and Training Commission, and what we're doing to implement those.

Since passage of the MINER Act, which NMA aggressively supported, we've been moving aggressively to meet the mandates of the act. Senator Isakson touched upon many of the accomplishments. There's a chart that's appended to my testimony that further delineates those, but let me touch upon one or two.

With the recent approval of expectation training units, we are now going to be training each miner annually on units that imitate the breathing resistance and heat that they will experience when and if they have to don an SCSR. This is a tool that has never been available in the past and will be valuable to the miners.

We've installed lifelines in both the primary and secondary escape ways and emergency tethers are provided in the event that miners have to link to one another in the event of an emergency escape. And all miners have submitted plans now to provide 96 hours of post-accident breathable air to sustain miners that are unable to escape and await rescue. And I would note, that the vast majority of these are meeting the requirement, by using refuge chambers that may or may not ultimately be approved by MSHA, and that's a problem for the industry today.

These steps and others taken beyond the requirements of the MINER Act have resulted in a safety investment of approximately $250 million for NMA member companies alone. These numbers simply reflect one quantifiable measurement of the industry's commitment to the MINER Act and there's more to be done. We've undertaken several voluntary initiatives outside the MINER Act. We established with MSHA and NIOSH a review committee to review existing mine rescue procedures. And this resulted in the development of a generic mine rescue handbook that has been shared throughout the industry for those that are forming new mine rescue teams and developing mine rescue protocols. Additionally, we're working with industry communications specialists to develop protocols for communications with the media and families in the event of an emergency.

But we do face impediments to continue the improvement. Dr. Kohler talked about the mine emergency communication partnership that has been formed. We participate in that. It has been very valuable. The purpose of the partnership is to evaluate technologies for use in underground mines. What we have found, is that what may work in one application will not necessarily work in another, so we have hurdles to overcome.

Similarly, we're working with NIOSH in the development of the new SCSR and we have been an active participant in the development of the Personal Dust Monitor, something that we support.

Another impediment or challenge that we face is the often conflicting regulatory requirements imposed by MSHA and State governments that I alluded to earlier. We don't have the luxury of time to develop one technology that complies with MSHA requirements, another for one State, and possibly another for a third or fourth State.

Dr. Bessinger talked about the small marketplace that we provide to manufacturers. That is a very real problem for us. Many manufacturers opt not to bring their products to the mining marketplace, and this is the importance of NIOSH today. They fill that void in the development of technology and, in our view, at no time in recent history has the expertise residing in NIOSH been more vital to improving mine safety.

While NIOSH continues to develop and implement advances in mine safety, progress has been slowed due to the erosion of research funds. We thank you for your support of this critical government function and urge you to, again, ensure that funding that is commensurate with the role intended by Congress under the MINER Act.

Finally, the path to future improvement—as you know, in January 2006, NMA appointed an independent commission to immediately undertake a study of new technologies, procedures, and training techniques that can further enhance safety in underground coal mines. The Commission unanimously adopted 75 recommendations that are both near-term and far-term in nature.

Many of the recommendations endorsed actions taken by Congress in implementing the MINER Act and many are being implemented now by the industry. The central theme of the Commission's recommendations is a call for a new approach that focuses on a systematic and comprehensive risk assessment-based model toward prevention. This won't be easy, but we're committed to the task and we're working with NIOSH to develop tools and templates to disseminate throughout the industry, so that everyone can bring this into their safety program. It is time that we renew our efforts on prevention, and risk assessment is an integral part of that.

Madame Chair, we look forward to working with you and members of this committee and members not in this committee who have a keen interest in mine safety, as we continue our collective efforts towards improvement. Thank you and I'd be happy to answer any questions you have.

[The prepared statement of Mr. Watzman follows:]

PREPARED STATEMENT OF BRUCE WATZMAN

Good morning. My name is Bruce Watzman, and I am the vice president of safety, health and human resources for the National Mining Association (NMA).

NMA and its member companies appreciate the opportunity to discuss with the subcommittee the industry's actions to implement the Mine Improvement and New Emergency Response Act of 2006, which NMA supported; what remains to be accomplished; the impediments that we face; our views on enhancing mine safety research capabilities and the role of technology to advance miner safety and health; and the findings of the independent Mine Safety Technology and Training Commission and what the industry is doing to implement its recommendations.

MINER ACT

NMA worked toward the passage of the MINER Act. We continue to believe that its core requirements are sound. The requirements, as implemented through Emergency Response Plans, recognize the need for a forward-looking risk assessment, that good safety practices continually evolve based upon experience and technological development, and that every underground coal mine presents a unique environment and what may work in one may not be effective or desirable in another. As the act's legislative history succinctly states: "The goals of optimizing safety and survivability must be unchanging, but the manner for doing so must be practical and sensible."—S. Rep. No. 109–365 p. 3.

We believe that this passage not only aptly captures the intent of the law, but also serves as a useful reminder to the industry and regulators that there is often more than one way to achieve our singular purpose to improve workplace safety.

Since passage of the MINER Act the industry has moved aggressively to identify technology that will enable us to meet the mandates of the act in as short a timeframe as possible. While more work needs to be done to fully comply with the act's mandates, the industry has, as reflected below and in the chart that accompanies this statement, made significant progress. To date:

• 86,000 new self-contained self-rescuers (SCSR) have been placed into service in the last 12 months and more than 100,000 will be added in the coming months.

• All 55,000 underground coal miners have and will continue to receive quarterly training on the donning and use of SCSRs.

• With the recent approval of expectation training units, all miners will begin to receive annual training with units that imitate the resistance and heat generation of actual models.

• Mines have installed lifelines in both their primary and secondary escapeways and emergency tethers have been provided to permit escaping miners to link together.

• Underground coal mines have implemented systems to track miners while underground; underground coal mines have also installed redundant communication systems, and new systems to provide post-accident communication continue to be tested.

• All mines have submitted plans to provide post-accident breathable air to sustain miners that are unable to escape and await rescue.

• Thirty-six new mine rescue teams have been added or are in the planning stages, even before MSHA initiates the rulemaking required by the act.

These steps and others taken beyond the requirements of the MINER Act have resulted in a safety investment of approximately $250 million for NMA member companies alone.

These numbers simply reflect one quantifiable measurement of the industry's commitment to the MINER Act. And it is only the beginning. Just as the MINER Act itself is not the end, but rather one means for reaching our desired goal to protect our Nation's miners.

Even before the enactment of the MINER Act, NMA and its members engaged the National Institute for Occupational Safety and Health (NIOSH) and Mine Safety and Health Administration (MSHA) in a mine emergency communications partnership.

The purpose of the partnership is to evaluate current practices and technologies, design performance criteria and protocols for testing, and identify mines where the technologies can be tested. Our members have volunteered their mines for testing tracking and communications systems. Some of these technologies hold great promise; however, they are, in our estimation, some years away from readiness for mine application.

Communications and safety experts agree that underground coal mines present unique challenges to radio and wire signal propagation. What works in one mine may not perform in another. As we seek to find and deploy the best systems, we will continue in the meantime to improve conventional systems to provide more reliable means for tracking and communicating with miners underground.

Beyond the actions taken by the industry to comply with Federal and State rules we have undertaken several voluntary initiatives that we would like to bring to your attention.

The industry along with MSHA and NIOSH initiated a review of existing mine rescue procedures to determine if existing practices and protocols remain operative given the structural changes that have occurred across the industry. This effort resulted in the development of a generic mine rescue handbook that can serve as a guide for those forming mine rescue teams and developing mine rescue protocols, as well as a review tool for those with established procedures in place. This docu-

ment has been distributed throughout the mining industry to be used as a pre-event planning template that will expedite the delivery of mine rescue services in an efficient manner, should they be required. It is also readily available to the industry and public on NMA's Web site at *www.nma.org*.

Working with the industry's communication specialists, NMA is developing a protocol for communications with the media during a mining crisis. The protocol recognizes the important role of the media in keeping communities informed about the facts surrounding a mining accident or fatality and the obligation of mine operators to contribute to that understanding. The protocol will provide a framework for effective communications and cooperation with MSHA, as envisioned by the MINER Act.

Another challenge we face is the often conflicting regulatory requirements imposed by MSHA and State governments. We do not have the luxury of time to develop one system that complies with MSHA requirements, another for one State and possibly a third or fourth for additional States.

Unfortunately, the underground mining marketplace is not attractive to many technology providers. In the interest of miner safety, it is imperative that we embrace policies that encourage the broadest possible application of technology across all underground coal regions.

MINE SAFETY RESEARCH

At no time in our recent history has the expertise residing at NIOSH's mining program been more vital to improving mine safety. The elimination of the Bureau of Mines in 1995 was a blow to the longstanding and renowned government leadership in mine safety and health research. The permanent establishment through the MINER Act of NIOSH's Office of Mine Safety and Health will begin to restore this important function to its former prominence. However, without adequate resources, the Office of Mine Safety and Health's leadership in this area will suffer, and the MINER Act's expectation for the acceleration in the pace of research and progress will be frustrated.

While NIOSH continues to develop and implement important advancements in mine safety and health, progress has slowed due to the erosion of research funds, and the situation is becoming critical. Because NIOSH's budget for mine safety and health has remained relatively flat in recent years, its purchasing power continues to decline with the increasing cost of labor, materials and other research costs.

As we consider how to advance the development and introduction of new technology, we urge you to again strengthen this vital government function and ensure funding for NIOSH is commensurate with the role Congress intended under the MINER Act to "enhance the development of new miner safety technology and technological applications and to expedite the commercial availability and implementation of such technology in mining environments."

MINE SAFETY TECHNOLOGY AND TRAINING COMMISSION—THE PATH TO FUTURE IMPROVEMENT

In January 2006, NMA established the Mine Safety Technology and Training Commission, an independent body, to immediately undertake a study of new technologies, procedures and training techniques that can further enhance safety in the Nation's underground coal mines. The commission drew upon the knowledge and experience of mine safety and health professionals from academia, government, industry and the United Mine Workers of America to develop a pro-active blueprint for achieving zero fatalities and zero serious injuries in U.S. underground coal mines. The product of the commission's deliberations is a peer-reviewed report that was released in December 2006. The report has been recognized outside the industry as a blueprint to achieve the goal of zero fatalities and accidents.

The commission unanimously adopted 75 recommendations that are both near-term and far-reaching in scope. Many of the recommendations endorse actions taken by Congress in passing the MINER Act. The commission's recommendations cover communications technology; emergency preparedness; response and rescue procedures; training; and escape and protection strategies.

The central theme of the commission's recommendations is a call for a new paradigm for ensuring mine safety—one that focuses on a systematic and comprehensive risk assessment-based approach toward prevention that serves as the foundation from which all safety efforts will flow. This new approach will require us to look at mining differently and to train miners differently.

The industry is currently implementing a number of the commission's near-term recommendations and is developing a blueprint for action on the more far-reaching items. For example, we are discussing with NIOSH the development of risk-based management tools and templates to assist the industry in its implementation of the

central recommendation of the commission. The use of risk-analysis risk-management, while not a common practice throughout the industry, is familiar to many of the larger companies. Our goal is to create operational tools that will help every company identify and address significant hazards before they create situations that threaten life or property. While having systems and practices in place to aid miners in the event of an emergency is important, it is equally, if not, more important that we renew our attention on prevention and risk-assessment as an integral part of this effort.

We share the commission's view that adoption ". . . of a comprehensive, risk assessment-based approach toward prevention should significantly increase the odds of survival for miners in emergency situations, [and] also provide a guideline for pursuing zero accidents from all sources." We are mindful, however, that this is a significant undertaking. As Professor Jim Joy of the University of Queensland, Minerals Industry Health and Safety Center, has described the Australian mining industry's experience with implementation of a risk-based approach, as "immense and fraught with stumbling blocks." Nonetheless, we are committed to the task.

Today the industry faces important challenges. More complicated geological conditions, advancements in technology and a new generation of miners require the introduction of new and innovative techniques. Our ability to further advance coal mine safety will require that government and industry continue to harness their collective resources to identify new technologies and practices that eliminate accidents, illnesses and injuries in the workplace.

We look forward to working with you to ensure that the resources required to achieve this goal are available so that every miner can return home safely each and every day.

Thank you. I would be happy to answer any questions.

Senator MURRAY. Thank you very much, all three of you, for your excellent testimony.

Mr. O'Dell, let me start with you. A few months ago, we heard from Mr. David McAteer, former MSHA Administrator, a recognized authority on mine safety, and he testified at a Senate Appropriations hearing and said, "Unfortunately, for the average miner underground today, not much has improved from the day-to-day safety and health standpoint." A few months have now passed since that hearing. I would like to ask you, what has the average miner seen in changes since we passed the MINER Act?

Mr. O'DELL. They've probably seen the addition of a self-rescuer, one more than they had before, some mines may see additional lifelines. We used lifelines when I worked in the coal mine. I happened to work for a progressive company, at the time they used lifelines, so miners will see additional lifelines in different entries, so they'll see some of those changes.

They will have been trained a little more than what they had received before. And that's all well and good, and I think it's important that we've made those steps. But the real question is, if a disaster were to occur, would we be able to get to those miners in a timely fashion?

Senator MURRAY. So, what's missing?

Mr. O'DELL. I don't think, across the board, we have the number of mine rescue teams that we need, that is necessary to rescue them, if necessary. I don't think we have in place the communications, I don't think we've addressed all the seal issues yet, that will be protective.

Senator MURRAY. What about the emergency response plans—Dr. Bessinger said they had one, do you know of any other mines with their emergency plans in place yet?

Mr. O'DELL. We heard there are about half of those that have been approved, but there's still, the other half that haven't been completely approved, so——

Senator MURRAY. And the mine rescue teams, that was an important part of the MINER Act, as well. Do you know where MSHA is on their rulemaking on the mine rescue teams?

Mr. O'DELL. I can't answer that.

Senator MURRAY. Dr. Bessinger, I really appreciate your being here today. Your company seems to have taken sort of a risk-adverse approach to protecting workers. Why have you done that?

Mr. BESSINGER. Well, I think our approach is one that is a product of our cumulative corporate experience, and BHP Billiton, being the largest diversified natural resource company has over 100 installations in 25 different countries, and we endeavor to apply the best practices of any of those installations, where applicable, at any of the other installations.

Risk assessment happens to be one of those techniques. And through the application of risk assessment, we've identified many of the needs that were only subsequently identified, and we've been able to proactively respond to those. You know, prior to them being required.

Senator MURRAY. You did do them prior to being required—does that affect your profitability?

Mr. BESSINGER. Well, there's certainly been a cost impact associated with compliance, eventhough we did many of the initiatives prior to their requirement, we believe that over about a 2-year period, it's going to cost us in the neighborhood of $9.5 million to comply. Above and beyond what we already did.

Senator MURRAY. Mr. Watzman, can you talk about the reactions from mine operators to the increased spine structure that was passed in the MINER Act?

Mr. WATZMAN. Beyond MINER Act, MSHA has now finalized regulations that dramatically increase the civil penalties that can be written.

There was a fundamental difference in philosophy, in the view of the operators, as opposed to those promoting increased penalties. There was a belief on the part of some that penalties are an inducement to cause one to do the right thing. That is something that the industry disagrees with. We believe that you run a safe mine, because we have seen, time and time again, that a safe mine is a productive mine. Those are not competing goals, those are complimentary goals. There was all of the inducement necessary today for operators to run safe operations, and the vast majority of them do so.

One of the more interesting statistics is there are approximately 14,000 mines across the country—both in coal, and metal/nonmetal operations. And I think that the number MSHA will use—and they can provide it or I can get it for you, if you would like—that somewhere in the range of 9,000 or 10,000 of those mines operated last year without a single lost-time accident. Those mines understand that they're not conflicting goals. If you are going to produce a product in this industry, you're going to run the mine safely. And in so doing, you're going to reduce your number of citations that are issued.

Senator MURRAY. Senator Isakson, I'm out of time.

Senator ISAKSON. Mr. O'Dell, it's good to see you again, thank you for your testimony.

The recent report issued on the findings of the Sago Mine disaster, did the mine workers or yourself have any comment on those findings?

Mr. O'DELL. We believe that, if you look at the overall picture, there were a lot of things that failed leading up to the disaster. And, I think that's where we, and the agencies, agree. We disagree on what caused the explosion, we put that in our report, we don't believe lightening was the cause, but if it was the cause, then there needs to be things put in place to protect miners in the event that ever happened.

But, the bottom is that we, the State and the Federal agencies have all agreed, there were a lot of failures that occurred leading up to that, and we need to address those, such as the seals, ventilation controls, proper training of miners, SCSRs and those things.

Senator ISAKSON. Mr. Watzman, your comment on that?

Mr. WATZMAN. We did not prepare an independent report. We have reviewed the reports of both the company, the State, and MSHA, and recognize that there are some conflicting conclusions in all of them, but there are areas of agreement.

Like Mr. O'Dell, many of those have been addressed by the MINER Act, and the actions that MSHA is taking, in terms of increasing the number of SCSRs that are provided underground, increasing the training for miners on how to use and don an SCSR, making that quarterly training now, more frequent drills on evacuation training, frequency of understanding of escape ways, both primary and secondary, so while we didn't prepare our report, and if there are conflicts, we are in agreement that there are issues that we—labor, and the Government—support to prevent this in the event that there's another occurrence like this.

Senator ISAKSON. Dr. Bessinger, I commend you and your company on your attention to safety in the interest of your miners and your company.

On the underground chamber that you were referring to, or that was referred to in the testimony, I think you showed a picture of that.

Mr. BESSINGER. Yes.

Senator ISAKSON. Do you have surface access for—do you own the land above the chambers, where you can access the surface, directly?

Mr. BESSINGER. No, we actually don't own the land, that land is BLM land. We have access to that land, we don't actually own it.

Senator ISAKSON. The reason I ask that is, in West Virginia—the Senator from West Virginia can correct me—most coal mines run under houses, roads, shopping centers, privately-owned land, and are accessible by mineral rights, which does not provide the type of access that you get, either through ownership or the Bureau of Land Management's permission, so every—as we promote that, and I really commend you for doing it—I wish everybody had the access to being able to drill straight down so that you could have fresh air come in, have control over that land.

Mr. O'Dell, on the Self-Contained Self-Rescuers and the docking system I heard the previous witness testify to—it sounded to me like that development would have changed the survivability time for the Sago miners, am I correct on that?

Mr. O'DELL. We actually spoke about that with Dr. Kohler at our last MSHA meeting of the committee. And, the units that they're looking at now very possibly could have helped those miners survive. There were some problems with that, that we asked them to look into, as far as caking on the bottom, because there are chemicals involved, and so after we find out if that's going to be a problem or not, we'll see if we can——

Senator ISAKSON. Very promising development, though, I think.

Mr. O'DELL. Yes.

Senator ISAKSON. I was very excited to hear that, having dealt with Senator Rockefeller and Senator Byrd, and the tragedy of that one disaster—that, and the ability to communicate in that particular accident were the two most profound things that need to be addressed, at least the Self-Contained Self-Rescuers docking device sounds like a real breakthrough in terms of that.

Mr. O'DELL. If I may add, if I could—if you want to find out what miners are thinking, do like I do. When this job gets to the point that my head gets filled up with too much of the bureaucracy and the red tape, I go back to where I used to work, and I sit down on the miner, and I mine coal with my buddies and put roof bolts in, if I was on the longwall, I cut coal with a shear, pull shields in, shovel some coal on the belt. And some of the things we talk about are some of the things you're asking right now.

And when we talk about self-rescuers, miners are encouraged, but part of the problem is, they see what firefighters, and mine rescue team personnel have, when they come to a mine site. And they have a full-faced mask that they place on, and they're getting full oxygen, they're getting real oxygen, rather than having to rely on a chemically-generated piece of equipment.

So they ask, how come we can't get that kind of protection as miners? And so we passed that along to the agencies to look into that, as well. They can help you speak better because you don't have anything in your mouth.

Senator ISAKSON. My time is up, thank you, Madame Chairman.

Senator MURRAY. Senator Rockefeller.

Senator ROCKEFELLER. Thank you.

Dr. Bessinger, you said something which was interesting to me, and is conflicting. You put down the phrase "culture of safety" and that's very easy to say. It has not generally been the practice of mining throughout the United States, underground mining, in particular. But, nevertheless, you say that. If you say that, couldn't you just say that companies are following the rules and regulations that exist on the books, and therefore you would be practicing the culture of safety, or zero harm?

Mr. BESSINGER. Well——

Senator ROCKEFELLER. I think you would have to agree that the legislation which is on the books, didn't need further changing.

Mr. BESSINGER. Well, I think—thank you for that question—I would actually characterize that just a little bit differently.

There has been a culture of compliance, where a company's efforts, an operator's efforts are focused at compliance with laws and regulations that are on the books. And then there is a safety culture, where we all focus on the concept of zero harm. Obviously, we always comply with the laws and regulations of any jurisdiction in

which we operate, but at the same time, we go above and beyond that with this safety culture leading to zero harm, and that involves the risk assessment and that involves site-specific considerations for any given mine, its unique concerns to address the safety issues that might appear.

Senator ROCKEFELLER. That's just confusing to me, I don't understand that. The zero harm, again—catchy, good. You're happy to present that to us. But, if you compare yourself—I don't know which of the two of you were talking about—do you have a lot of coal mines overseas?

Mr. BESSINGER. We have 100 operations through BHP Billiton——

Senator ROCKEFELLER. All right, well now, I'm just really curious about that, because everything I've seen of coal mines being run overseas, maybe not by you, is according to a standard which we would have not approved of 50 years ago. Is your standard of running over there—coal mines—exactly the same as your standard here, assuming that the standard here is sufficient? Is there no difference? Are they run exactly the same way?

Mr. BESSINGER. There is much overlap, I'm not sure I would go so far as to say they're identical in every respect, because from geographic location to location, the needs of complying with the rules and regulations of any jurisdiction are different, and we certainly comply in any jurisdiction where we operate——

Senator ROCKEFELLER. Can I just interrupt? Do you, Mr. Watzman, and do you, Dr. Bessinger, believe in climate change, and that we're going to have to do something about it in the next 10 or 15 years—do you believe in it?

Mr. BESSINGER. I'm not sure that I have an informed opinion about that.

Senator ROCKEFELLER. Well, then let me ask you this—you may not—if you haven't, that's interesting, if you're in the coal business, you ought to have done quite a lot of reading on that. But, let me just pose this question to you—let's supposing that you're not sure that the science is right, but you're not sure that the science is wrong. Are you willing to bet the farm on the fact that the science is wrong? What I'm asking you is, in that, virtually all science says that that is a problem, and it's a problem that we have to solve very quickly, and it's a problem which will make all other problems that we're dealing with in this, and other places around the world, very marginal in importance, that means that all of a sudden there's going to be a tremendous emphasis on energy independence, getting away from oil, and mining a whole lot more coal—that ought to be good news to you. Very, very good news to you, because most of the coal in the East has declined in its volume, the coal in the West, because people got there before the Industrial Revolution is later—it's still there. The quality of the coal is still good, but it doesn't make any difference, it can still be made very effective.

Now, if you're faced with something like that, and you're talking about zero harm, I'm confused about how you face the future. You, Mr. Watzman, admitted no mistakes. You didn't really give any sense at all that coal mines could be doing something more than they're doing. And one of the things that—and correct me if I need to be corrected—but one of the things, it seems to me, in dialogues

of this sort, which are not under oath, but which have the effect of being under oath, insofar as we're concerned, that if people who—and this applies to the United Mine Workers, too, because the United Mine Workers is not always perfect—that you tell us what we need to know, not what you want us to hear.

This is always my worry, about when you're getting told—if it's in the Government, you know it's not what they believe, because the OMB has to approve every single word of every single testimony that they say, so it's kind of a kabuki dance. With you, it shouldn't be—here we're talking about life and death, we're talking about probable global climate change legislation coming out of this Congress over the next number of years, which are going to provide you with the greatest benefit that you ever had in your life.

And, what I have to have some confidence in is that you're going to be able to deal with that—all of a sudden, a tremendous influence on mining coal, which can be done cleanly, and as cleanly as atomic energy, in fact, sequestration, other carbon dioxide control methods that you can do it safely, that you will do it safely, I have to know that.

Mr. BESSINGER. Well, I certainly have no reservation about making the commitment that coal can be mined safely, and that were there to be future expansion of coal mining in the United States that it certainly would be done safely and legally, in full recognition of all of the relevant laws.

Senator ROCKEFELLER. In other words, your point is, if it's done under the existing laws, under the existing regulatory bodies, that's, in a sense, zero harm?

Mr. BESSINGER. Our version of zero harm is different than that, our version of zero harm transcends the simple need for compliance, and actually aspires to a higher goal.

Senator ROCKEFELLER. I know, you said that, and I wasn't really quite sure what you meant by that.

Mr. BESSINGER. Well, what it means is that we use our safety processes that we've developed elsewhere throughout our company to achieve performance that exceeds that that would be achieved by compliance acts alone.

Senator ROCKEFELLER. Well, whatever that means, Madame Chairman, I thank you for allowing me to sit——

Senator MURRAY. Absolutely.

Senator ROCKEFELLER [continuing]. At your hearing, and I thank the distinguished Senator from Georgia who, is not as familiar with coal, but he is a rock-solid doer of good. After his visit to West Virginia.

Senator MURRAY. Thank you very much, Senator Rockefeller. I don't have any additional questions, Senator Isakson, do you?

Senator ISAKSON. No. Thank you.

Senator MURRAY. With that, then, we will conclude this hearing, I want to thank all of our witnesses, and I would like to ask unanimous consent for the hearing record to remain open for 7 days for any additional materials.

With that, this committee is adjourned.

[Additional material follows.]

ADDITIONAL MATERIAL

PREPARED STATEMENT OF SENATOR ENZI

Good morning. I want to thank Chairman Murray and Ranking Member Isakson for holding this important hearing. Of the many responsibilities with which this committee is charged, none is more important than the responsibility to secure the job safety of our Nation's workers, including those that work in the mining industry.

When tragedy struck last year at the Sago Mine in the coal fields of West Virginia, this committee acted swiftly, and in a bipartisan manner, to understand what went wrong and what changes needed to be made in our mine safety laws. Our first step was to go to West Virginia, at the invitation of Senator Rockefeller, so that we could meet the families of the 12 miners whose lives were lost, learn about the Sago mine operation and talk directly with the MSHA officials who were charged with enforcement in that district. On that trip with me were Senators Kennedy, Isakson, and Rockefeller, as well as Senator Murray's staff. All of us were deeply affected by what we saw and heard in West Virginia. We returned to Washington with a greater understanding of what was needed to enhance mine safety and with a unified sense of commitment to the task at hand.

Tragically, just as we returned to Washington and began working on legislation, another accident occurred in West Virginia at the Aracoma mine. It claimed two more lives. While these twin tragedies were a terrible reminder of what can go wrong in an underground coal mine, they also served to help set clear priorities for legislation that would better protect miners both immediately, and down the road. The product of those legislative efforts was the MINER Act—the most comprehensive reform of mine safety legislation in over a generation. In the MINER Act we mandated that every coal mine develop and continuously update emergency response and preparedness plans that are designed to make mining accidents more survivable. To date, all coal mines have submitted plans, and a third of them are fully approved. These plans ensure that every mine will be using the best technology available to enhance surface to underground communication, to aid in the location of underground personnel, and to provide additional breathable air for miners that are trapped underground. The MINER Act also encourages the development of better technology, which is difficult to foster for such a small market. The act enhances the mine safety research and development efforts of the National Institute of Occupational Safety and Health, encourages private sector technology development, and speeds the approval of new equipment.

Because we worked in a bipartisan manner, we were able to introduce this legislation and report it out of the HELP Committee with unanimous support by mid-May; and to unanimously pass the MINER Act in the Senate 1 week later. Two weeks later it was approved by the House with an overwhelming margin of support, and 1 week after that it was signed into law by the President. In the 109th Congress, the MINER Act was 1 of 27 HELP Committee bills that were signed into law—a truly remarkable number. As in all 26 other instances, we were able to achieve passage of the MINER

Act because we worked together without regard to party designation.

Mining today is a highly specialized and technologically complex industry. It is also one of our most heavily regulated industries. Congress does not make changes to the Mine Safety and Health Act either frequently or lightly and that kind of legislative restraint is largely a good idea. Most of us in Congress are not engineers or scientists, mining professionals or technological geniuses that should be mandating specific, one-size-fits-all requirements for enhancing mine safety. We most certainly have the responsibility for setting the goals, and overseeing the progress, but we must rightly leave the day-to-day task of securing those goals in the hands of experts. Thus, for the most part, Congress properly relies on the Mine Safety and Health Administration and the mining experts at the National Institute of Safety and Health to regulate the industry and adjust those regulations to changes in the industry and in technology. Those bodies to which Congress delegates such important responsibility must be subject to congressional oversight. Congress, for its part, however, must be fair and rational in the exercise of that oversight. Since the passage of the MINER Act, much has been accomplished in making our Nation's mines safer. In this respect, the collective efforts of miners and mine operators; and Federal and State regulators are to be applauded. These efforts must continue, and we should never be reluctant to level constructive criticism where it is warranted. However, we should not be leveling criticisms that are not grounded in fact or logic. For example, MSHA should not be faulted for failing to require the use of equipment which has not been developed or which is not available in the marketplace; nor, should it be faulted for moving too slowly on an issue when it is moving within the time guidelines specifically set in the MINER Act. This kind of criticism does little to advance the cause of mine safety, and suggests that those who level such criticisms are more concerned about partisan politics than sound policy.

Those of us that understand mining also understand that it presents unique safety challenges. The problems are complex, the solutions varied, and the risk of unintended consequence substantial. In the MINER Act, we placed an emphasis on developing practical and individual approaches that will better protect miners immediately. We also mandated standards that will be able to evolve with technology, and to encourage the development of better miner-protecting technologies so that this industry will not be allowed to fall behind progress. Such approaches should continue through the regulatory process, and we need to foster and encourage that result.

Thank you.

U.S. DEPARTMENT OF LABOR,
MINE SAFETY AND HEALTH ADMINISTRATION,
ARLINGTON, VIRGINIA 22209–3939,
May 8, 2007.

Hon. ROBERT C. BYRD,
Chairman,
Committee on Appropriations,
U.S. Senate,
Washington, DC. 20510–6025.

DEAR CHAIRMAN BYRD: This is in response to your recent letter regarding the implementation of the Mine Improvement and New Emergency Response Act (MINER Act). I apologize for the delay in sending this response; however, we wanted to provide the most up-to-date information possible regarding our progress in implementing the MINER Act. Please see the enclosed chart of our progress to date. I assure you that significant progress has been made by the Mine Safety and Health Administration (MSHA) and that the agency is working diligently to fully implement the MINER Act.

I offer the following in response to the five concerns raised in your letter.

• **MSHA has not fully approved any Emergency Response Plans**

The MINER Act requires underground coal mine operators to develop and adopt written Emergency Response Plans (ERPs) specific to the mines they operate. In accordance with the MINER Act, MSHA required operators to submit plans by August 14, 2006. MSHA provided operators with guidance related to the requirements for breathable air on February 8, 2007. This meant that ERPs could only be partially approved. Revised ERPs, indicating how breathable air will be provided were required by March 12, 2007. To date, 160 ERPs have been fully approved and plan provisions are in effect. MSHA inspectors are checking for compliance during inspections.

For an ERP to be fully approved by MSHA's District Manager, the operator's plan needs to provide MSHA adequate assurance of a miner's ability to evacuate or survive an emergency. If the District Manager determines that an operator has failed to meet the obligation to comply with these requirements, the plan will not be approved by MSHA.

MSHA has found deficiencies in some operators' ERPs in the areas of breathable air, redundant communication, post accident tracking, SCSR storage, training, and/or local coordination. MSHA is promptly requiring improvements to these plans. Should operators fail to submit improved ERPs, MSHA will take enforcement action. Specifically, operators will be issued a citation and the dispute concerning that section of the ERP will be subject to the Federal Mine Safety and Health Review Commission's (FMSHRC) formal dispute resolution process as stipulated in Section 2 of the MINER Act.

• **MSHA has not approved any wireless communications and tracking technology for use underground**

New technologies for wireless communication and tracking are being developed by industry with assistance from the National Institute for Occupational Safety and Health (NIOSH), however no truly wireless systems have been submitted to MSHA for approval. It is important to note that, since the accidents of 2006, there has been more rapid development of this technology. MSHA has communicated with interested parties regarding 137 proposals for new communication and tracking technologies. We have met with 49 of these parties, and conducted field demonstrations of 19 systems.

Between January 2006 and April 27, 2007, MSHA received 51 applications for approval of communication and tracking systems. Thirty-four applications are currently being reviewed, and 17 have already been approved. Three approvals are new approvals, and 14 are modifications to previously approved pager phones and leaky feeder systems.

Based on the number of ongoing efforts with many interested vendors, cooperative efforts with NIOSH and the grants issued by NIOSH for the development of this technology, we expect to see a significant increase in the number of new communication and tracking approval requests in the months ahead.

• **Miners still do not have adequate oxygen supplies underground**

With implementation of the Emergency Temporary Standard for Emergency Mine Evacuation and the Final Emergency Mine Evacuation rule, the demand for SCSRs has exceeded the supply. The majority of the devices preferred by mine operators are made by two of three manufacturers. While there is a quantity of available SCSRs made by the third manufacturer, MSHA agrees with the United Mine Work-

ers of America that mixing the types of devices in use at a mine does not promote safety. Due to the backlog, MSHA has accepted purchase orders with a delivery date from operators as a good faith effort to comply with the MINER Act. MSHA has asked the SCSR manufacturers to give priority consideration to operators who do not have two SCSRs for every miner when filling orders. The manufacturers have pledged to do so.

• Only 145 mine rescue teams are available to serve 481 active underground coal mines

Additional mine rescue teams have been formed. MSHA continues to be proactive in terms of offering new teams training and training materials, but ultimately it is the responsibility of operators to create new teams. Currently, there are 153 mine rescue teams available for response to 474 underground coal mines, and we anticipate that other new teams will be formed as well. These teams are qualified, well-equipped, and available for underground mine rescue, should the need arise.

MSHA is currently drafting a rule to revise MSHA's existing standards for mine rescue teams for underground coal mines. The mine rescue team rule will strengthen training requirements and address composition, availability, and certification requirements for coal mine rescue teams. The proposed rule will be available later this spring for public comment. The final rule is scheduled to be issued no later than December 15, 2007, and we expect to meet that deadline.

• MSHA still does not ensure that underground mines have flame-resistant lifelines in escape ways

The Emergency Temporary Standard for Emergency Mine Evacuation and the Final Emergency Mine Evacuation rule increased the demand for flame-resistant lifelines. Flame-resistant lifelines are required upon replacement of existing lifelines, no later than June 15, 2009. As the result of the initial demand on lifeline manufacturers and resultant backlog, MSHA accepted purchase orders for flame-resistant lifelines, as a good faith effort to comply with the MINER Act. Manufacturers have caught up on orders of lifelines and are now supplying the industry with lifelines to keep pace with mines as they advance underground. As a result, 97 percent of the Nation's active underground coal mines have flame-resistant lifelines installed.

MSHA's staff continues to work diligently toward fulfilling the agency's statutory responsibilities as quickly as possible. We will be pleased to provide regular updates regarding MINER Act implementation.

Thank you for your commitment to improving the health and safety of our Nation's miners.

Sincerely,

RICHARD E. STICKLER,
Assistant Secretary for Mine Safety and Health.

MINER Act: Implementation Dates and Status

Description of Task	Status**
SEC. 2. EMERGENCY RESPONSE	
Develop and adopt an Emergency Response Plan (ERP) that contains provisions for post-accident communications and tracking; post-accident breathable air; lifelines; training; and local coordination.	MSHA issued Program Policy Letters P06–V–8 on 07/21/06; P06–V–9 on 08/04/06; P06–V–10 on 10/24/06 implementing the Emergency Response Plan (ERP) provisions in section 2 of the MINER Act.
Update plans periodically	MSHA issued breathable air guidance on 2/8/07 in Program Information Bulletin No. P07–03. ERPs submitted to MSHA by 08/14/06. MSHA has partially approved 90 percent of ERPs. Once the breathable air provisions are fully implemented, ERPs can be fully approved.

MINER Act: Implementation Dates and Status—Continued

Description of Task	Status**
Post-accident communications and tracking	MSHA issued a Request for Information on 01/25/06 soliciting proposals for new communication and tracking technology. MSHA is sharing results of evaluation and testing with NIOSH. MSHA is evaluating submitted proposals, assisting in arranging demonstrations, observing testing at various mine sites, meeting with communication and tracking system company representatives, and communicating with parties interested in developing a mine communication and/or tracking system. Between January 2006 and April 27, 2007, MSHA received 51 applications for approval of communication and tracking systems. Thirty-four applications are currently being reviewed, and 17 have already been approved. Three approvals are new approvals, and 14 are modifications to previously approved pager phones and leaky feeders systems. MSHA issued PIB P07–01 on 01/18/07 addressing the use of Global Positioning Systems during storms.
Post-accident breathable air for maintenance of individuals trapped underground.	MSHA published an RFI on 8/30/06; comments received 10/10/06. MSHA issued PIB P07–03 and associated compliance materials containing options for providing post-accident breathable air to underground coal miners on 02/08/07. Mine operators were required to submit a portion of the ERP addressing breathable air by 3/12/07; as of May 8, 2007, MSHA has fully approved 160 ERPs including breathable air provisions. The National Mining Association has challenged breathable air guidance in DC Circuit Court. Mine operators must implement breathable air provisions 60 days after MSHA approval of ERP.
Post-accident, flame resistant, directional lifelines.	Required in emergency mine evacuation final rule published 12/08/06. The final rule requires that lifelines be made of flame-resistant material upon replacement, and that all lifelines be flame-resistant no later than June 15, 2009.
Training program for emergency procedures	Required in emergency mine evacuation final rule published 12/08/06.
Local coordination and communication between the operators, mine rescue teams, and local emergency response personnel.	Required in Emergency Response Plan.
Emergency Response Plan approval and review ..	Required to be submitted to MSHA by 8/14/06 and every 6 months thereafter.
SEC. 4. MINE RESCUE TEAMS	
Provides certification, composition, and training requirements for underground coal mine rescue teams.	MSHA drafting proposed rule. Final rule due 12/14/07.
SEC. 5. PROMPT INCIDENT NOTIFICATION	
Requires operator to notify MSHA within 15 minutes of a death or an injury or entrapment, which has a reasonable potential to cause death.	Included in Emergency Mine Evacuation (published on 12/08/06). Civil Penalties final rule published on 3/22/07; final effective 4/23/07. MINER Act penalties are currently being assessed.

MINER Act: Implementation Dates and Status—Continued

Description of Task	Status**
SEC. 7. REQUIREMENT CONCERNING FAMILY LIAISONS	
MSHA to be liaison and primary communicator with families of victims and primary communicator with mine operators, the press, and the public.	Assistant Secretary for MSHA was assigned responsibility for developing Family Liaison Program on 11/02/06. MSHA issued PPL P06–V–11 on family liaison and primary communicator on 12/22/06 implementing section 7 of the MINER Act. MSHA is developing policy to be implemented as a part of accident investigation handbook. Training completed for 14 designated MSHA personnel.
SEC. 8. PENALTIES	
Revise existing rule to increase minimum penalties for unwarrantable failure citations and orders; and ''flagrant'' violations.	MSHA issued PIL 106–111–02 implementing new minimum civil penalties on 08/29/06; and 106–111–04 establishing procedures for evaluating ''flagrant'' violations on 10/26/06. Proposed rule published on 09/08/06; Public hearings held during September and October 2006. Final rule published on 03/22/07; final rule effective 04/23/07.
SEC. 10. SEALING OF ABANDONED AREAS	
Requires increase of 20 psi standard for sealing of abandoned areas in underground coal mines.	MSHA issued PIBs establishing a temporary moratorium on new seal construction until the agency issued subsequent guidance for addressing alternative seals: PIB–06–11 issued 06/01/06; PIB–06–12 issued 06/12/06; PIB–06–14 issued 06/21/06; PIB–06–16 issued 07/19/06. Seal strength for alternative seals was increased to 50 psi under this PIB. Final rule due 12/14/07. MSHA issued PIL 106–V–09 on 08/21/06 establishing procedures for agency approval of ventilation plans that include alternative seals. MSHA has approved one plan that included alternative seals and has approved a number of others provisionally. MSHA will continue to work with NIOSH on research and testing of seals, particularly full-scale testing of seals at higher explosion pressures. NIOSH draft report issued 02/09/07. MSHA does not know when final report is due.
SEC. 11. TECHNICAL STUDY PANEL	
Establish Belt Air Technical Study Panel to provide review and recommendations on the use of belt air and the composition and fire retardant properties of belt materials in underground coal mining.	Belt Air Technical Study Panel established 12/20/06. 1st meeting held on January 9–10, 2007. 2nd meeting held on March 28–30, 2007. 3rd meeting scheduled for May 16–18, 2007. Procedures and timetable established. Relevant documents posted on MSHA's Web site.
Submit a report to the Secretaries of Labor and HHS and to the Congress.	Panel report due 12/20/07.
Provide a response to Congress describing the actions that the Secretary intends to take base on the report and the reasons for such actions.	Secretary's response due 6/20/08.
SEC. 13. RESEARCH CONCERNING REFUGE ALTERNATIVES	
Conduct research, including field tests, on the utility, practicality, survivability, and cost of refuge alternatives in an underground coal mine environment.	MSHA will share with NIOSH data collected as a result of MSHA's RFI, published 01/25/06, and other MSHA/NIOSH public meetings, including 03/13/06 meeting on mine rescue communication and tracking technology and 4/18/06 meeting on Mine Escape Planning and Emergency Shelters.

MINER Act: Implementation Dates and Status—Continued

Description of Task	Status**
Issue report to Congress concerning its research results.	NIOSH report due 12/15/07.
Provide response to Congress describing the actions that the Secretary intends to take based on the report, including proposing regulatory changes.	MSHA response due 6/15/07.
EMERGENCY MINE EVACUATION RULE	
MSHA issued final rule, effective immediately, on 12/08/06 finalizing emergency temporary standard providing improved protections for emergency mine evacuation.	On 03/30/07, MSHA issued notice on SCSR training units which now must be used. National Mining Association has challenged the final rule in the DC Circuit. SCSR training units must be purchased by April 30, 2007; operators must provide this training by June 30, 2007.

** PIB = Program Information Bulletin.
PIL = Procedure Instruction Letter.
PPL = Program Policy Letter.
RFI = Request for Information.

MSHA Actions to Enhance Mine Safety

Mine Improvement and New Emergency Response (MINER) Act: On June 15, 2006, the President signed the MINER Act into law. MSHA's actions to implement the act include:

• *An Emergency Temporary Standard on Mine Seals:* On May 22, 2007, MSHA published in the *Federal Register* an ETS to increase protection for miners who work in underground mines with sealed off abandoned areas. Although Section 10 of the MINER Act gives MSHA until December 2007 to issue a new standard on mine seals, MSHA has concluded that, based on its accident investigations of the Sago and Darby mine explosions, MSHA's in-mine seal evaluations, and recent reports on explosion testing and modeling, immediate action is necessary to protect miners. This ETS goes beyond the MINER Act—which requires that the standard on mine seals be greater than the 20 psi established in 1992—to include requirements to strengthen the design, construction, maintenance and repair of seals, as well as requirements for sampling and controlling atmospheres behind seals.

• *A Final Rule on Civil Penalties:* After passage of the MINER Act, MSHA immediately implemented increased penalties for late accident notification and unwarrantable failure violations. On March 22, 2007, MSHA published a final rule to increase civil penalty amounts for mine safety violations. Issuance of this rule goes beyond the requirements of the MINER Act and demonstrates the commitment of MSHA to protect the safety and health of our Nation's miners. MSHA has already issued 13 citations for flagrant violations, including three of the largest proposed penalties in the history of the agency.

As prescribed by the act, the final rule:

- Establishes a maximum penalty of $220,000 for "flagrant" violations, as proposed in the President's previous budgets.
- Sets minimum penalty amounts of $2,000 and $4,000 for "unwarrantable failure citations and orders.
- Imposes a minimum penalty of $5,000 (up to a maximum of $60,000) for failure to timely notify MSHA of a death or an injury or entrapment with a reasonable potential to cause death.

Other major provisions of the final rule applicable to all mines and contractors:

- Increases civil penalties overall by an estimated 179 *percent* using 2005 violation data—targeting the most serious safety and health violations with escalating penalties.
- Adds a new provision to increase penalties—notwithstanding the severity—for operators who *repeatedly* violate MSHA standards.
- Replaces the $60 single penalty with higher formula assessments for non-significant and substantial (non-S&S) violations.

• *Approval of Emergency Response Plans:* MSHA is reviewing and approving Emergency Response Plans mine operators are required to implement under the

Act. Plans must address post-accident communications, tracking, and increased air supplies for trapped miners.

• Mandated Post-Accident Breathable Air: On February 8, 2007, MSHA issued a Program Information Bulletin (PIB) providing mine operators guidance concerning acceptable ways to fulfill the breathable air requirements in the MINER Act. Options for providing acceptable quantities of breathable air for trapped miners are:

(1) Drilling boreholes within 2,000 feet of the working sections of mines;

(2) Having 48 hours of breathable air located within 2,000 feet of working sections coupled with contingency plans for drilling boreholes if miners are not rescued within 48 hours;

(3) Having 96 hours of breathable air within 2,000 feet of working sections; or

(4) Other options that provide equivalent protection.

• *Established Family Liaisons:* On November 2, 2006, the Secretary of Labor signed an Order establishing the Family Liaison and Primary Communicator positions. MSHA has trained 14 family liaisons. The National Transportation Safety Board and the American Red Cross have helped train these individuals.

• *Belt Air:* The Belt Air and Conveyor Belt Materials Technical Study Panel required under the act has held three meetings: The first was held January 9–10, 2007 in Washington, D.C.; the second March 28–30 in Pittsburgh, PA; and the most recent one May 16–17 in Salt Lake City, UT. A fourth is scheduled for June 20–22 in Birmingham, AL. As required by the MINER Act, the Panel will publish its report by December 20, 2007.

• *Refuge Alternatives:* MSHA is working with NIOSH and the States to explore refuge alternatives for trapped miners. By the end of this year, NIOSH is scheduled to report the results of the research to the Department of Labor. By mid-2008, in accordance with the MINER Act, the Department of Labor will report to Congress on the actions MSHA will take in response to the NIOSH report. As an interim step, MSHA is accepting State-approved refuge chambers as a means of providing breathable air for trapped miners.

• *Underground to Surface Communications Systems in Coal Mines:* As of May 2, 2007, MSHA has met with representatives of 49 communications and tracking system companies, observed the testing or demonstration of 20 post-accident communications and tracking systems, and approved 19 systems, including four new devices.

• *Brookwood-Sago Grants:* MSHA has identified resources in its fiscal year 2007 budget to develop a pilot program. MSHA expects to award approximately half a million dollars through this demonstration.

Final Rule on Mine Evacuation: On December 8, 2006, MSHA issued a final rule to strengthen mine evacuation practices in four key areas. The rule was based on an Emergency Temporary Standard (ETS) issued by MSHA on March 9, 2006.

• *Self-Contained Self Rescue (SCSR) Devices:* The rule requires coal mine operators to provide additional SCSRs for each miner underground in areas such as working places, on mantrips, in escapeways, and where outby crews work or travel. The rule also requires that they be readily accessible in the event of an emergency.

• *Multi-Gas Detectors:* The rule goes beyond the requirements of the MINER Act by requiring coal mine operators to provide multi-gas detectors to miners working alone and to each group of miners.

• *Lifelines:* The rule requires coal mine operators to install directional lifelines in all primary and alternate escape routes out of the mine. Lifelines help guide miners in poor visibility conditions toward evacuation routes and SCSR storage locations.

• *Training:* The rule requires coal mine operators to conduct quarterly training for miners in how to don SCSRs and especially how to transfer from one SCSR to another at a cache location. SCSR training units for annual expectations training have now been developed. On March 30, 2007, MSHA published a notice in the *Federal Register* notifying mine operators that the units were available. Mine operators must have had a purchase order for these training units by April 30th and must conduct training with them within 60 days of receipt of the units.

• *Accident Notification:* The rule requires all mine operators to "immediately contact" MSHA after an accident within 15 minutes of its occurrence.

New Mine Inspectors: MSHA has hired 117 new enforcement personnel staff and is on schedule to hire 170 new coal mine enforcement personnel by September 30, 2007. Once on board, these 170 new enforcement personnel will provide MSHA more coal enforcement personnel than at any point since 1994.

Prosecution of Bad Actors: Since February 2006, MSHA has filed five precedent-setting lawsuits seeking injunctions against mine operators who have chronically failed to pay assessed civil money penalties for violations of the Mine Act. Two have been settled and the others are nearing favorable resolution. On May 15, 2007,

MSHA filed a case in the 6th Circuit Court of Appeals to enforce payment of $146,000 in overdue civil penalties.

Special Emphasis Programs: Beginning in February 2007, MSHA initiated special emphasis inspection programs in southern West Virginia and eastern Kentucky to examine roof control plans and roof support methods in mines that use retreat mining methods.

Special Health Emphasis Program: In February 2007, MSHA conducted a nationwide targeted Special Health Emphasis enforcement program to ensure operator compliance with the applicable respirable dust standard. Over 1,130 dust samples were collected from February 20 to March 3, 2007, at 61 selected underground coal mines in all 11 coal districts. Thirty-two citations and one unwarrantable failure order for ventilation plan violations were issued during the health inspections, two citations were issued for excessive dust, and 44 percent of the enforcement actions were designated as Significant & Substantial (S&S).

Pattern of Violations: MSHA has recently initiated the development of objective criteria to identify mines that may have a pattern of violations. Once this new criteria are in place, MSHA plans to issue pattern of violations notices and orders where warranted.

Stand Down For Safety: During the week of April 16, 2007, MSHA asked metal/nonmetal mine operators to take a brief "time-out" to meet with their employees and contractors to discuss practical accident preventative measures. MSHA inspectors, personnel from MSHA Educational Field Services, and individuals from the MSHA Small Mines Office continue to visit mines to distribute materials that address hazard identification and reporting, safety gear use, job planning, job set up, job procedures, and tool choice. MSHA also provided operators with technical help investigating root causes of accidents, including communications issues, human factors, and supervisory procedures.

BHP BILLITON,
SAN JUAN COAL COMPANY,
WATERFLOW, NEW MEXICO,
June 18, 2007.

Hon. PATTY MURRAY, *Chair,*
Subcommittee on Employment and Workplace Safety,
U.S. Senate,
113 Hart Building,
Washington, DC.

DEAR MADAME CHAIR: On behalf of BHP Billiton, I want to thank you for the opportunity to testify at the subcommittee's hearing of May 22, 2007 on the topic of "Promises or Progress: The MINER Act One Year later." It was my great honor and pleasure to provide you with the views of BHP Billiton on this critically important topic and to provide you with information about our safety and health programs.

The additional purpose of this letter is to supplement my prepared statement in light of questions from Senator Rockefeller about my comments that our program at the San Juan Underground Coal Mine is designed not only to ensure that we comply with the requirements of the Federal Mine Safety and Health Act of 1977 (as amended by the MINER Act), but also that they are aimed at achieving safety results beyond compliance with Federal mine safety regulatory requirements.

More specifically, in my prepared statement, I said that:

> Our bottom line is that at any BHP Billiton site, we seek to create a mindset and an environment where people believe it is possible to work injury-free and everyone understands they are empowered to manage safe production by stopping work at any time they feel the activity is unsafe. This occurs regardless of where they are in the world, what role they undertake, or in which business they work. We call this objective *Zero Harm*. (Emphasis added.)

Senator Rockefeller's skeptical questions are not unusual or unexpected. However, we want to assure the subcommittee that Zero Harm is serious business for our company. Indeed, Zero Harm is part of our overarching Sustainable Development Policy (see www.bhpbilliton.com/bbContentRepository/sdpolicy.pdf) aimed at creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners, and host communities. More specifically, as you can see from "Our Future State, Achieving Zero Harm in Safety," (see www.bhpbilliton.com/bbContentRepository/nmc.pdf) among the principles of Zero Harm is that effective safety leadership is a prerequisite for promotion; compliance with safety standards

and procedures is absolute; "at risk" behaviors are not acceptable and are addressed when observed; and repeat incidents are evidence of an out-of-control operation.

To provide in-depth support for our goal of Zero Harm, BHP Billiton has developed a number of protocols, standards, and guides all of which are provided to our employees and are available to the public on our Web site, *www.bhpbilliton.com*. These are discussed further below, with specific Web site preferences. Thus, our "Fatal Risk Control Protocols" were developed through work groups made up of individuals from across BHP Billiton with extensive experience in operations, following a review of our past fatalities and significant incidents.[1] The Protocols establish minimum performance expectations for managing the risk areas identified at leading practice levels. However, the existence of these Protocols does not presume coverage of all risk areas faced by our operations. These other risk areas are addressed through the risk management process that is a key element of the BHP Billiton "Health, Safety, Environment and Community Management Standards."[2]

Our "health, safety, environment and community policy" is also an integral part of BHP Billiton's "Guide to Business Conduct," which defines the basic principles of business conduct demanded of each and every BHP Billiton employee.[3]

To conclude, across BHP Billiton, our line managers are accountable for implementation of the standards, systems, and procedures we have in place to achieve Zero Harm. We are confident that these standards and associated systems and procedures are the right ones, and have directed our efforts toward the effective and consistent implementation of these throughout the Company.

In sum, in our drive to achieve Zero Harm we have learned that:

- Low injury frequency rates do not necessarily mean low fatality rates—we cannot and should not draw any comfort from low injury rates in terms of our capacity to eliminate fatalities;
- Injury reduction programs alone will not prevent fatalities—a complementary focused effort is required on fatal risk—this is why we have implemented our Fatal Risk Control Protocols;
- Our fatalities often have similar underlying causes;
- High near-miss reporting often correlates with declining injuries or fatalities—our ability to take heed of the signals from near-miss events is crucial to our efforts in eliminating fatalities;
- Leadership visibility in the field is vital—our current state of safety maturity relies heavily on leadership energy to deliver improved performance;
- Effective contractor management is essential; and
- Hazard identification and risk awareness are fundamental to success.

With particular regard to the San Juan Underground Coal Mine and our New Mexico Coal Operations, please find attached our "New Mexico Coal Sustainability Report—2006." You will see that it provides important information and benchmarks about how our protocols, standards, and guides are implemented at our New Mexico Operations.

We sincerely hope that this supplemental information is responsive to the questions raised.

Thank you again for your interest in our miners' safety. BHP Billiton is ready and willing to advise and assist you as you continue to examine mine safety issues.

Very truly yours,

S. L. BESSINGER, PH.D., P.E.,
Engineering Manager,
BHP Billiton San Juan Underground Mine.

[Whereupon, at 11:32 a.m., the hearing was adjourned.]

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[1] *See, http://www.bhpbilliton.com/bb/SustainableDevelopment/safety/fatalRisk ControlProtocols.jsp.*

[2] *See http://bhpbilliton.com/bbContentReportinq/docs/PeopleandEmployment/Business ConductGuide.pdf.*

[3] *See http://bhpbilliton.com/bbContentReporting/docs/PeopleandEmployment/BusinessConductguide.pdf.*