

July 17, 2007  
Representatives of MSHA  
Denver, Colorado

Comments on the Emergency Temporary Standard (ETS) on Sealing of Abandoned Areas of Underground Coal Mines.

Dear MSHA Representatives,

I (et. al.) am a representative of miners on behalf of the International Union of Operating Engineers, Local 953, at the San Juan Underground mine in Waterflow, New Mexico.

The Agencies attention to the safety needs of Americas' coal miners in respect to the effectiveness of seals used to isolate abandoned areas of coal mines is both welcomed and timely. Clearly, the events in the recent past that have promulgated the legislation that will soon affect all coal mine operators and coal miners, are in need of remedy.

I have previously sent comments on the results of the NIOSH work in this area and have received their comments in return. I have included my previous comments on this report with the submittal presented to you today. My comments today will be to encourage the Agency and operators to continue the dialog about safety and to promote the development of technologies that will increase the safety of miners and not burden the Agency, operators, or the miners unduly.

My comments include the following:

1. As may seem self evident, the key to accident prevention is just that, prevention. The creation of regimes of protection to give resistance to forces generated in the event of an explosion in a sealed area of a coal mine would be greatly welcomed by those witnessing such an event, if it were to occur. Unfortunately, this methodology only gives resistance to the explosion. Prevention of such an explosion would seem to be the wiser pursuit. In examination of mine explosion disasters in the recent past, it would seem that knowledge of the dangerous concentrations of an explosive mixture coupled with a definite response plan to such concentrations as well as an active program of gob gas management could have lessened the effects noted so well in the national press.

An active program of monitoring, gob gas management, and a related action plan should be included in all mine ventilation plans. Examples of this process exist both in the United States coal industry as well as internationally. Experience gained from those operators who monitor and manage gob gasses, both domestic and abroad, should be examined thoroughly for incorporation into ventilation plans in the United States. Not all US mines would be in need of the highest levels of management, but lessons could be learned.

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2. An effective action plan for response to explosive mixtures, the indicator gasses associated with heating events in gob coal, or a fire would be tremendously affective in the prevention of a mine explosion disaster. Utilization of an action plan depends, however, on one single factor more than any other; timeliness. Timely information about the state of a gob's gas mixture is obviously not easy to obtain. Technology has offered systems that can provide this data on a far more timely basis than the statutory bag sample can provide. One manufacturer offers their system under what is commonly called a "Tube Bundle System". The technology exists in all its component forms for other uses in other industries. A greater level of acceptance on the part of MSHA for use of such systems could greatly increase the safety of miners through an action plan geared to respond to the specific needs of each mine and their unique gas production characteristics.

Although not a true real time AMS system, it is far more timely than bag samples. Such systems should be thoroughly examined for acceptance as a second level AMS system that a mine operator could use to maintain proper and safe atmospheres for their workers as required by law.

3. As necessity can be the mother of invention, the full implementation of the requirements of this ETS and other aspects of the Miner Act(s), it would seem that ideas could generate synergies that would greatly increase the safety and productivity of America's coal mining industry. An effective forum of the presentation and examination of new technologies should be promoted. Such a forum would include input from manufacturers, mine operators, MSHA, and the coal miners themselves. These are all the key stake holders in the coal mine safety process and all of their inputs should be given examination in a timely fashion in an equal setting.

Thank you for your time and attention to this issue.



Chris Barbee  
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March 26, 2007  
Dr. R. Karl Zipf  
NIOSH  
Pittsburgh Research Laboratory  
Pittsburgh, PA

Review of Draft Report on the Explosion Pressure Design Criteria for New Seals in U.S. Coal Mines

Dear Dr. Zipf,

I am responding to the above draft report on behalf of the coal miners represented by the International Union of Operating Engineers (IUOE), Local 953 in New Mexico at the BHP San Juan Mine. As a Representative of Miners for our work group, I have been asked to issue comment on the draft report and offer other suggestions as to the implementation of legislation. Namely, the "Mine Improvement and New Emergency Response Act of 2006" or the "Miner Act".

First, the report is fine work. Many aspects of seal evaluation and construction that have not been previously examined are considered in this report. Aspects of prevention and monitoring are also noted which is greatly welcomed by our miners.

Rather than attempt to second guess or contest the results that are presented in the report, we would like to offer additional considerations that will help increase the safety of our mines as well as protect the operators and miners from undue burden.

These considerations include the following:

1. An increase in the protective strength of mine seals is welcomed. However, an examination of the dangers associated with seal construction seems to be missing. Materials handling is a constant danger and source of injury to the miners who actually construct seals on site. As "bigger" can equate to "better", bigger means an increased potential for injury both repetitive and catastrophic. When the guidelines for seal construction are finalized, please include consideration for the welfare of the construction crews and some measure of protection from injury from the additional materials handling that is sure to accompany new seal construction.

2. All of the mine disasters and explosions listed in the report have one thing in common that was not examined in the report. An explosive mixture was present and was not detected. Apparently, there were no action plans present to withdraw miners from the mine if indication of an explosive mixture were detected. While the “bigger is better” mindset would definitely have a positive effect on the safety of miners, prevention of an explosion in the first place is the real key to success. The current sampling regimen allowed under law could easily allow an explosive mixture to arise in the time it takes to get results back from a laboratory. In the report, consideration for “real time” monitoring is given. This is a positive step in prevention of sealed area gas explosions. Relief from the highest standards of seal construction is even given when monitoring is incorporated in seal management to encourage this methodology and is also welcomed as prevention is often more important than cure. Promotion of monitoring and development of appropriate action response plans needs to be given more emphasis in the final version of the report. Clarification of where and how often monitoring is to be done would also help operators and inspectors as it is unclear if each seal or each sealed area requires monitoring.
3. The report examines placement of seals based on a distance from an area of free expansion for explosion pressures away from a seal. As operators will tend to select methods that will reduce cost and time of construction, placement of gob seals less than 3 meters from a caved area may prove problematic. By reducing the distance to the gob and preventing the explosion volume from being large enough to encourage the additional energies of an explosion from occurring, operators could use a less costly and time consuming seal. As breakage of the mine roof close to a caved or gob area isn't easily predicted, construction of a less substantial seal closer to a more geologically active area could cause the seal to be structurally compromised due to loading. Rather than increase the size requirements for a seal so close to a questionable area, it would be advised to move the seal further back from the cave line. If this distance is increased but not to a point that encourages increased energies from reaching the seal face, then the strength of the seal could be preserved. Observations indicate that a distance of at least 30 feet from the gob side rib line would increase a seal's survivability and help preserve its strength.
4. Consideration of the positive effects of supplemental roof support for the protection of a seal should also be given in the design and evaluation steps for new seal construction. For instance, if roof to floor supports such as can cribs help protect a seal from the effects of convergence, wouldn't they also serve as protection for the seal from explosive forces by being a shield to some extent for the seal. If evaluation could show this to be so, this would encourage operators to install this type (or similar) of roof to floor support and gain relief from the higher strength standard that will prove to be more costly and time consuming.

5. Installation of anchoring bars in the body of a seal to hitch it more effectively to roof, rib, and floor is also examined in the report. This is proposed for the purpose of gaining an additional 0.5 safety factor for the overall performance of a seal in terms of blast resistance. As a typical seal installation at our coal mine would require over 200 anchor points, this would also increase the potential for injury during the construction of a seal. As the proposed guidelines already incorporate a safety factor of 2.0, is this additional work necessary? As the mass of a seal and the required notch hitching noted in the report are great resistors of movement due to blast impulse, these two factors should be examined as to their effectiveness and incorporated into seal design as opposed to the additional anchorage requirements.
6. There are eight construction materials shown in Figures 25, 26, and 27. Allowance for new or different materials for construction should be noted in the seal design portion of the report. Operators and miners would greatly welcome the possibility of reducing materials handling and increasing mechanized installation of seals. This is probably inherent in the design phase but could be more clearly stated.

Again, this effort to help increase the safety of our miners all across the United States is very positive. With our cooperative efforts in defining the new seal design rules, the results should be acceptable to miners, operators, and inspectors alike and preserve our ability to maintain safe coal production from America's mines.

Thank you,



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