

House Committee on Small Business
Subcommittee on Regulation, Healthcare, and Trade

Regulatory Burdens on Small Firms: What Rules Need Reforms?

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Thank you Chairman Gonzalez, ranking member Westmorland, and members of the subcommittee for your interest in the Mine Safety and Health Administration's (MSHA) regulation of explosives. Because its regulations are nearly up to four decades old, MSHA's approach is inconsistent with industry standards, national consensus standards, and other agency's regulations. These inconsistencies expose miners to undue risk and waste the resources of mining operators and contractors, the vast majority of whom are small businesses.

The last 22 years of my professional career have been devoted to improving the safety of explosives in the public domain. I received a B.S. and M.S. in Mining Engineering from the University of Pittsburgh in 1985 and 1986. After a short time as a sales representative for an explosives company, I spent 12 years researching explosives safety for the U.S. Bureau of Mines (USBM) and then the National Institutes for Occupational Safety and Health. As such, nearly all that research focused on mine safety. For the last 10 years, I have carried on my "life's work" as the Manager of Technical Services for the Institute of Makers of Explosives.

The IME is the safety and security institute of the commercial explosives industry. Our mission is to promote safety and security through the protection of employees, users, the public and the environment; and to encourage the adoption of uniform rules and regulations in the manufacture, transportation, storage, handling, use and disposal of explosive materials used in blasting and other essential operations. IME member companies produce over 98 percent of the high explosives, and the vast majority of blasting agents and oxidizers. These products are used in every state of the Union and are distributed worldwide.

IME estimates that over 3,000 government entities regulate the civil use of explosives in the United States. It seems like an outrageous number, but these agencies run from the federal level down to municipalities and, at each level, different agencies are often responsible for mining, protecting the environment, security, transportation, or employee safety. These mandates and regulations often overlap. Therefore, consistency, whenever possible, is paramount to small business blasting contractors' ability to comply with the cacophony of regulations that apply to them.

Based on my extensive involvement with or as a member of many national consensus standard setting bodies and my intimate familiarity with the vast set of regulations that impact explosives, the MSHA explosives regulations are unacceptably out-of-step with the times. This is most unfortunate considering that 87 percent of explosives are consumed in mines; 65 percent consumed in surface coal mines alone.¹ The National Fire Protection Association's national consensus standard, NFPA 495, which addresses explosives safety, has been updated 10 times since MSHA's surface coal regulations were apparently cast in stone in 1971.²

Since 1999, I have been in many meetings and discussions with MSHA officials and employees at all levels, labor representatives, and mine operators regarding updating these regulations. Despite universal agreement that the regulations need to be updated, MSHA cannot seem to find the will to make it happen.

For the remainder of my testimony, I will describe the most significant vulnerabilities and burdens created by MSHA's lack of attention to explosives in recent years.

Inconsistencies with Current Best Practices

There are many examples where MSHA's regulations are inconsistent with current best practices. Even MSHA's own regulations for coal and metal/nonmetal mines are inconsistent with each other. These inconsistencies expose miners to higher levels of risk than other explosives users and waste the resources of operators.

Perhaps the most glaring inconsistencies exist with the fundamental concepts of "blast site" and blast area." It is hard to imagine a use of explosives where these two concepts should not apply.

MSHA's coal regulations do not recognize the fundamental concept of keeping the "blast site" clear of unauthorized personnel and equipment. MSHA's metal/nonmetal regulations³ and nearly every other U.S. explosives safety standard are consistent in this regard. Instead of using the standard language, the MSHA surface coal regulations require demarcating "areas" where there are "charged holes."⁴ Besides not prohibiting the unsafe act itself, the size of the "area" is not defined. The exact meaning of the term "charged holes" has been a regularly occurring issue of contention between operators, MSHA, labor and IME.

¹ <http://minerals.usgs.gov/minerals/pubs/commodity/explosives/myb1-2006-explo.pdf>.

² NFPA 495, Explosives Materials Code, 2006 ed.

³ 30 CFR 56/57.6306(c).

⁴ 30 CFR 77.1303(g).

MSHA's coal regulations do not recognize the fundamental concept of clearing the "blast area" before attaching a device capable of firing the shot. MSHA's metal/nonmetal regulations⁵ and every other U.S. explosives safety standard are consistent in this regard. Instead of using this well-understood term of art, the MSHA surface coal regulations require clearing personnel from a "blasting area", but does not clearly state when this should take place.⁶ The terms "blasting area" and "blast area" are used elsewhere in the coal regulations where the "blast site" would normally be used.⁷ This regulation should be crystal clear since MSHA claims that failure to maintain blast area security causes half of the explosives accidents in mines.⁸

IME's written nomination of MSHA's explosives regulations to the SBA's r3 initiative describes 13 more examples of safety gaps in MSHA's explosives regulations for coal mines. I am attaching a copy for the hearing record.

Some of MSHA's regulatory inconsistencies do not necessarily cause safety gaps, but do waste the resources of small businesses. Rules written for the days when black powder was the dominant blasting material are still on the books and enforced by MSHA despite no basis in safety. Storage practices allowed by all other agency regulators in the U.S. are considered illegal by MSHA. Federal Mine Safety and Health Review Commission Chairman Michael Duffy recently described a novel MSHA explosives enforcement action in this area as "regulatory bait and switch."⁹

Outdated References

MSHA does not have a current definition of "explosives" in their regulations. While we support the use of U.S. Department of Transportation (DOT) definitions for the classification of explosives, MSHA's metal/nonmetal regulations refer to nonexistent sections of DOT's regulatory code for its definitions of "detonator", "blasting agent" and "explosive."¹⁰ Likewise, the surface coal regulations have a different definition of "blasting agent" than DOT. Both sets of MSHA regulations still use the explosives classification system (Class A, B and C) abandoned by DOT in 1992. Recently, an Administrative Law Judge kindly described MSHA's definition of blasting agent as being "not helpful" to the case.¹¹

⁵ 30 CFR 56/57.6306(e).

⁶ 30 CFR 77.1303(h).

⁷ 30 CFR 77.1303(gg), (kk), and (ll); and 30 CFR 75.1325(c)(1) and (2), 75.1326(a) and (b)

⁸ Verakis, H., "An Examination of Mine Blasting Accidents Over a Quarter of a Century", ISEE, Proceedings of the 32nd Annual Conference on Explosives and Blasting Technique, Jan. 29 – Feb. 1, 2006, Dallas, TX.

⁹ <http://www.fmshrc.gov/decisions/commission/cent2006-128-11302007.pdf>

¹⁰ 30 CFR 56.57.6000

¹¹ <http://www.fmshrc.gov/decisions/alj/ct2006-128.pdf>

MSHA's metal/nonmetal regulations also reference nonexistent sections of the Bureau of Alcohol, Tobacco, Firearms and Explosives' (ATF) regulations.¹² A critical error considering that, through a Memorandum of Understanding, MSHA agrees to help carry out ATF's congressional mandate to secure explosives commerce outside of transportation.

The MSHA coal regulations require the mixing and storing of blasting agents to be in compliance with a 1963 USBM standard¹³ "or subsequent revisions."¹⁴ The document was revised in 1977 by the USBM¹⁵ but was given a different title than what appears in the regulation, making it virtually impossible to find the document that is currently incorporated by reference into the regulation. This type of perpetual reference circumvents the appropriated rulemaking process and seems to be the very sort of instance Congress intended to avoid by passing the Administrative Procedure Act.¹⁶ Needless to say, bulk explosives technology has changed dramatically since 1963 and 1977. For example, the 1977 document does not address bulk emulsions, a type of blasting agent used extensively today. Dating itself, the 1977 document states that "AN-FO is now supplied mostly premixed", something that occurs rarely today.

Barrier to Improved Technology

Because the outdated regulations do not address the latest explosives products and their applications, small businesses are prevented from incorporating new technology and procedures that will improve safety, security, and operational efficiency. Large companies are also disadvantaged but have more resources and can more easily get around the same regulatory obstacles.

A good example of how the MSHA regulations present an obstacle to the introduction of improved technology by small businesses is the barrier presented to electronic detonators. Electronic detonators did not exist when MSHA's regulations were written and provide a quantum leap in the safety and security of detonators.¹⁷ Since electronic detonators are not addressed by MSHA's regulations, the agency treats them like standard electric detonators. Certain regulations for electric detonators¹⁸ are inappropriate and unsafe for electronic detonators. So to avoid unsafe practices, manufacturers must get MSHA to issue a Program Information Bulletin which exempts

¹² 30 CFR 56.6131(b)

¹³ USBM IC 8179, Safety Recommendations for Sensitized Ammonium Nitrate Blasting Agents, 1963.

¹⁴ 30 CFR 77.1304(a)

¹⁵ USBM IC 8746, Safety Recommendations for Ammonium Nitrate-Based Blasting Agents, 1977

¹⁶ 5 U.S.C. 552 & 1 CFR 51.1(f).

¹⁷ Electronic detonators actually represent the second technology revolution in initiation since the surface coal regulations were written. Shock tube based systems replaced electric detonators in the 1980's and 1990's but are not addressed in MSHA's coal regulations.

¹⁸ 30 CFR 77.1303(e), (y), (z), (nn), and (tt)

their brand-name product from MSHA's electric detonator regulations.¹⁹ This is a cumbersome process that can take months; even for the next generation of a previously approved electronic system. Such a process disadvantages small businesses from entering the electronic detonator market. Compounding the problem is the reluctance of state explosives regulators to depart from MSHA's treatment of electronic detonators.²⁰

MSHA's explosives regulations present obstacles to new technology for bulk delivery equipment, recycling used oil, recycling demilitarized explosives, enhanced security, and other explosives applications.

Security Vulnerabilities

The MOU mentioned earlier between MSHA and ATF is needed because it is not practical to train ATF personnel to safely enter and move around in underground mines. Therefore, ATF's responsibilities rest entirely on MSHA's shoulders in underground mines. Apparently, MSHA does not take this responsibility seriously.

MSHA's explosives regulations do not require explosives to always be locked when in storage underground.²¹ Also, to the best of my knowledge, MSHA is not providing oversight to ensure that only ATF approved personnel have possession of explosives underground. In my opinion, these two factors create the greatest vulnerability today to the diversion of commercial explosives from legitimate storage or use.

MSHA's regulatory barrier to the use of electronic detonators also inhibits security. Electronic detonators are essentially useless to an unauthorized person since they require a specific, digitally encoded signal to function. On the other hand, standard detonators can function by rudimentary means, of which our adversaries have become most adept. Since nearly 87 percent of explosives are used in mines, MSHA's regulations have hindered the market transition to electronic detonators.

Loss of the Ability to Conduct Safety Audits of Permissible Explosives

MSHA has lost its ability to ensure a safe supply of permissible explosives for the nation's underground coal miners. Permissible explosives are the only type that can be used in an underground coal mine because they have a lower tendency to ignite methane/coal dust mixtures which may result in a mine explosion. Ironically, testing and certifying a class of explosives permitted for used in underground coal mines was the first serious mine safety initiative made by the U.S. government at the turn of the 19th century.

¹⁹ <http://www.msha.gov/regs/complian/PIB/2004/pib04-20.htm>

²⁰ May 7, 2008 e-mail from David Spears, VA Department of Mines, Minerals and Energy to Lon Santis

²¹ 30 CFR 57.6160(b)(2)(ii)(5) and 75.1312

While permissible explosives usage has declined during the last century, the market has stabilized. Today, around 2 million pounds of permissible explosives are consumed in the U.S. annually. Mining coal with explosives has become an exclusive niche for small businesses in the underground coal mine community.

The unique properties of permissible explosives can only be evaluated using elaborate tests. MSHA has not conducted these tests for over 10 years, the equipment is in disrepair, and the corporate knowledge needed to conduct the tests is slipping away into retirement.

Despite consuming less than 0.1 percent of the explosives in the U.S., underground coal mines account for 12 percent of the accidents during explosives use.²² This trend has continued. Most recently, MSHA reported that “On October 23, 2006, a blaster with 25 years of mining experience was fatally injured from the forces of a methane explosion initiated by blasting.”²³ MSHA does not have the ability to evaluate whether the explosive products being used at the time met regulatory specifications. Additionally, MSHA has the regulatory authority and responsibility to conduct quality control testing by taking samples from mines and testing them²⁴ but has not done so for about 15 years. IME believes that such activity is vital to ensuring a safe supply of permissible explosives.

There are only three locations in North America (NA) that manufacture MSHA-approved permissible explosives and only two in the U.S. One of these locations has the only plant in NA that can make permissible dynamite. Plant accidents, shut downs, and other incidents could combine to shut down all or most of the supply of MSHA-approved permissibles. MSHA would have no way to ensure that replacement products meet the same level of safety. Finally, without the ability to test and approve new permissible explosives, future improvements in explosives technology will be kept out of underground coal mines.

Conclusion

We appreciate the opportunity this subcommittee has given us to again attempt to highlight these safety issues and impacts on small businesses. MSHA has failed in its mission as a regulatory agency to keep its rules relevant and in sync with other agency or recognized national consensus standards for safety. In our view, MSHA’s inaction has created risk where none need exist. Again, I thank you for this opportunity and I look forward to answering your questions.

²²Santis, L. “An Analysis of Recent Accidents During Use of Commercial Explosives”, ISEE, Proceedings of the 29th Annual Conference on Explosives and Blasting Technique, Feb. 2-5, 2003, Nashville, TN.

²³ <http://www.msha.gov/FATALS/2006/FAB06c42.asp>

²⁴ 30 CFR 15.10