



Approval and Certification Center

MSHA -Technical Support

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From the Center Chief's Desk

The explosion and tragic loss of life at the Performance Coal Upper Big Branch Mine in southern West Virginia on April 5 of this year serve as a sobering reminder to all of us in the mining industry of the important role that we all play in protecting the safety and health of the miners. The investigation of that event is ongoing, and it will undoubtedly be many months before we learn everything about what actually happened that fateful day. In the meantime, all us who work in this industry should be challenged to redouble our efforts to ensure that we are doing all that we can possibly do to create a safe and healthy environment for the men and women who risk their lives daily to provide for the energy and mineral resource demands of our great nation. The safety and health professionals at the Approval and Certification Center recognize our important role in this shared responsibility. As we continue to test and approve products, evaluate new technologies and provide expert technical assistance to our internal and external customers, our pledge is to use every ounce of our collective knowledge and skills to continue to improve the safety and health of the miners.

In this issue, we will introduce you to several new employees in the Electrical Safety Division, provide the latest update on communications and tracking, report on the investigation of radio frequency and electromagnetic interference issues, and discuss the accident prevention website and incident reduction program activities.

Thank you for your continued interest and support and for your valuable contribution to the reduction and elimination of safety and health hazards.

Enjoy the summer,

Ken Sproul

Kenneth A. Sproul

A&CC: More, Better, Sooner for the Miners.

Editor's Note: Mr. John P. Faini, Chief, Approval and Certification Center is temporarily assigned to the MSHA Technical Support headquarters office in Arlington, VA. Mr. Kenneth A. Sproul is serving as Acting Chief in his absence.

Accident Prevention Website

MSHA's website (www.MSHA.gov) contains a wide range of safety and health information and is available to interested

parties. The Approval and Certification Center (A&CC) Accident Prevention portion of the MSHA site provides information aimed at preventing accidents (http://www.msha.gov/Accident_Prevention/appmain.htm). This link can be found under *Special Initiatives* located in the center of the MSHA webpage. You can obtain the following information there:

The **Incident Reduction (IR) Program** offered by the Applied Engineering Division (AED) began in late 2002 to reduce mining accidents. It is a collective effort among miners, mine management and MSHA to identify safety issues at specific mines, develop solutions to those issues and cooperatively implement the solutions for the betterment of all parties. The program is voluntary, i.e. the operator asks the district for assistance and the district requests AED assistance. To date, over 20 mines, plants or contractors have received assistance as part of this program, resulting in an average 60 percent reduction in the Non Fatal Days Lost (NFDL) incident rate for the participating mines. More information about this program can be found in the next article.

Safety Ideas and Miners Tips are solutions or prevention techniques for certain risks or potential accidents involving miners. These documents briefly explain the problem or concern, and then provide common sense, down-to-earth solutions in an easy-to-read format. Miner's Tips are directed toward individual miners, while Safety Ideas are directed more toward mine management. Readers are encouraged to submit solutions they have implemented at work and may suggest topics. In many cases,

the problem solved by a miner yesterday is the same problem faced by a miner today. Sharing successful solutions can improve safety at all workplaces. The documents are sorted both by categories and by mine types for ease in finding information about specific interests.

Innovative Product documents provide information on technologies that MSHA engineers determined may have the potential to reduce certain hazards. Some products are new, while others have been used for some time, either in mines or in industries other than mining. MSHA does not promote the specific companies or the products themselves, but rather the technology.

Additional links to obtain information on New Technologies and Communication and Tracking are also provided on this site. You are encouraged to visit this site often and submit your ideas for inclusion. You can do this electronically using this link: [Accident Prevention Committee](#). If your idea is posted, you will receive recognition.

AED Incident Reduction Program

The goal of MSHA's Incident Reduction Program is to eliminate fatalities and accidents in the mining industry. The aim of this program is to obtain and maintain worker (hourly and management) involvement in the development of a total safety culture. This is not a quick fix program, but rather a continuous and evolving process to improve safety through improved communications, promoting active involvement by all miners, and improving safety awareness,

training, and education. Since each mine is different, A&CC personnel examine underlying root causes of specific mine accidents.

The basic process of the Incident Reduction Program has been broken down into the following steps:

1. Initial request by mine operator through consultation with the responsible MSHA District
2. Meet with mine management / labor
3. Data research and preparation
4. Conduct study through individual miner interviews and job observations
5. Analyze the results and prepare report for mine's consideration
6. Present recommendations to the mine
7. The mine addresses recommendations in the form of action items
8. Review and follow-up by MSHA for one year

MSHA has found that when there is a strong commitment to safety and health by mine management, improved safety is accomplished through good work habits and a proactive safety culture. To date, 20 operations have completed the year long program and have collectively reduced their non-fatal-days-lost incident rate by an average of 60%. Eight operations were unable to complete the program due to closing or idling the mines. Two operations are currently going through the process.

For more information, contact Mike Getto at (304) 547-2303 or email at Getto.Michael@dol.gov

Communications and Tracking Update

As of July 1, 2010, A&CC is processing 41 approval applications for communications and tracking (C&T) technology. Since the beginning of 2006, we have issued 153 new or revised approvals for C&T products. Significant approvals issued in June 2010 include a Becker Electronics Cap Lamp Mounted Tracking Tag and a Mine Site Technologies VOIP Handset.

We have observed 77 tests or demonstrations of 35 different C&T systems at various mine sites. We have met with representatives from 73 C&T system companies. To date, we have had discussions with various vendors regarding 192 different proposals for development of C&T systems.

A&CC personnel continue to support the introduction of post-accident C&T systems into underground coal mines in several ways. C&T applications are still prioritized. Additionally, A&CC personnel organized a C&T Workshop in March, followed by a C&T Manufacturers' Summit in May. At the workshop, A&CC personnel were joined by representatives of NIOSH and Coal Enforcement to present the latest C&T technology developments and implementation issues to more than 200 underground coal mining industry stakeholders. The intent of the subsequent C&T Manufacturers' Summit was to ascertain the difficulties the manufacturers were experiencing in supplying and installing post-accident C&T systems in mines, and to determine if MSHA could help their efforts. Many mine operators have begun installing the

post-accident C&T systems included in their approved Emergency Response Plans (ERPs), and Coal enforcement personnel will begin inspecting these installations when they come on line. A&CC personnel are assisting with documents drafted to provide additional guidance for the performance of these systems and for inspectors conducting the inspections of these systems.

In addition to these outreach efforts, the A&CC continues to attend demonstrations of approved C&T systems and of systems with applications currently in-house at the A&CC. We will continue to provide technical support to industry as more post-accident C&T systems come on line.

For more information, visit: <http://www.msha.gov/techsupp/commoandtracking.asp> or contact Dave Chirdon at 304.547.2026 or chirdon.david@dol.gov



MSHA Investigates Radio Frequency Interferences

Hand-held portable radios have been used underground for many years with little problem. However, with the passage of the MINER Act of 2006, there are more radios in mines than ever before. MSHA has received reports that some devices used for communication and tracking can affect the operation of other electronic equipment. These unwanted effects are a

result of interference caused by the presence of radio frequencies and electromagnetic fields generated by hand-held portable radios or other equipment. Unwanted effects can be caused by electromagnetic interference (EMI), within inches of the radio, or radio frequency interference (RFI), up to hundreds of feet away from the radio. Interference has been identified in electronic equipment, such as gas detectors, radio remote controllers, machine-mounted methane monitor displays, and LED cap lamps. Much of this equipment, especially some of the older electronics, was not designed to limit emission or to be immune from RFI and EMI.

Hand-held portable radios are not the only generators of RFI and EMI that can interfere with electronic equipment. Underground mining machines incorporate variable frequency drives, unshielded motors and high voltage circuits, and other features that can produce RFI and EMI.

MSHA is investigating the extent of the interference problem and is developing potential solutions to mitigate the interference effects. We recommend that manufacturers and mine operators jointly establish an interference risk management plan for each operation to ensure that the various systems used at each operation are analyzed for radio frequency compatibility and appropriate controls are put in place. If you have observed any unwanted effects caused by interference, please contact Richard O'Hanlon at 304.547.2316 or ohanlon.richard@dol.gov or Chad Huntley 304. 547.2076 or huntley.chad@dol.gov.



A&CC NEW EMPLOYEES

The A&CC, Electrical Safety Division (ESD) has three new employees.

Sarah Marie Zimmerman grew up in Bridgeport, OH, and graduated valedictorian of her class from Bridgeport High School. She graduated Summa Cum Laude from West Virginia University in 2010 with a Bachelor of Science in Mechanical Engineering. She participated in a mechanical engineering Cooperative Education program with DuPont- FEP Teflon Division. During college, she worked in a materials laboratory, where she performed and studied wear testing effects on carbon-nano tubes and other flexible polymers.

Gavin Ricketts was born in Manchester, Jamaica and moved to West Palm Beach, Florida. He attended Palm Beach Community College, and Florida Atlantic University where he received a Bachelor of Science in Electrical Engineering. He served in the United States Marine Corps as a firefighter. He was responsible for instructing fellow Marines in operating, servicing, inspecting and testing aircraft firefighting equipment and rescue vehicles. He also worked designing and installing solar photovoltaic systems.

David Thomas Barkand was born in Pittsburgh, PA and graduated from South Park High School. He received an Associate of Science in Electronics Engineering Technology from Community College of Allegheny County and graduated in 2010 with a Bachelors of Science in Electrical Engineering Technology from California University of Pennsylvania. He worked at the NIOSH, National Personal Protective Equipment Laboratory in Pittsburgh, PA, as a student physical science technician. He contributed to the research and development of an end-of-service-life sensor for personal protective respirator cartridges and coauthored a technical paper on the subject that was presented at the 12th International Meeting on Chemical Sensors. He also worked at the MSHA, Pittsburgh Safety and Health Technology Center in the Mine Electrical Systems Division in the Student Career Experience Program (SCEP).

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