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PROGRAM POLICY LETTER NO. P06-V-10

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Coal Mine Safety and Health

SUBJECT: Reissue of PPL No. P06-V-9: Implementation of Section 2 of the Mine Improvement and New Emergency Response Act of 2006

**Scope**

This Program Policy Letter (PPL) is intended for underground coal mine operators, miners and miners' representatives, independent contractors, Mine Safety and Health Administration (MSHA) enforcement personnel, and other interested parties working in underground coal mines.

**Purpose**

Section 2 of the Mine Improvement and New Emergency Response Act of 2006 (MINER Act) requires underground coal mine operators to have, within 60 days of enactment, an Emergency Response Plan (ERP), which is to be approved by MSHA and takes into account comments from miners and miners' representatives. Congress accordingly places an immediate responsibility on the part of the underground coal mine operators to develop plans to effectuate the purposes and requirements of the MINER Act.

This PPL provides policy and guidance to underground coal mine operators to facilitate the development of their ERPs. This PPL supercedes the previous reissue. Specifically, it supplements and clarifies the information provided in PPL No. P06-V-9 regarding emergency supplies of breathable air, appropriate distances between Self-Contained Self-Rescuers (SCSRs) in escapeways, and the process for ERP approval.

## **Policy**

The MINER Act addresses both the evacuation of miners endangered by an emergency and the maintenance of miners trapped underground. MSHA emphasizes that, in the event of a mine emergency, every effort must be made by miners to evacuate the mine. Barricading should be considered an absolute last resort and should be considered only when evacuation routes have been physically blocked. Lifelines, tethers, SCSRs, and proper training provide essential tools for miners to evacuate through smoke and irrespirable atmospheres.

In accordance with the MINER Act, underground coal mine operators must develop, adopt, and submit an Emergency Response Plan (ERP) to the appropriate MSHA District Manager no later than August 14, 2006. The MINER Act requires that the ERPs address both the evacuation of miners endangered by an emergency and maintenance of miners trapped underground. These plans must:

- a. Afford miners a level of safety protection at least consistent with the existing standards, including standards mandated by law and regulation;
- b. Reflect the most recent credible scientific research;
- c. Be technologically feasible, make use of current commercially available technology, and account for the specific physical characteristics of the mine; and
- d. Reflect the improvements in mine safety gained from experience under [the MINER] Act and other worker safety and health laws.

The provisions of the ERP, except for the completion of training, shall be effective upon adoption by the operator and are subject to MSHA's subsequent approval. In accordance with the MINER Act, MSHA will review the ERP at least every six months. Operators must periodically update ERPs to reflect: changes in operations in the mine, such as a change in systems of mining or mine layout, and relocation of escapeways; advances in technology; or other relevant considerations. When changes to the ERP are required, MSHA approval must be obtained before the changes are implemented. Training in the ERP provisions should be completed within thirty days of approval of each provision.

Section 2(b)(2)(B)(i) of the MINER Act requires that the ERP shall provide for the evacuation "of all individuals endangered" by an emergency. The individuals covered by this provision do not include properly trained and equipped persons essential to respond to a mine emergency, as permitted in 30 C.F.R. § 75.1501(b).

In considering comments from the miners or their representatives as specified in Section 2(b)(2)(C) and (D) of the MINER Act, MSHA will follow the procedure outlined for submission and approval of ventilation plans as noted in 30 C.F.R. § 75.370(a)(3)(i) through (b).

ERPs consistent with this PPL will facilitate approval of these plans by MSHA. At its discretion, MSHA may approve equivalent compliance alternatives to those in this PPL.

### *Emergency Response Plan - Content*

#### 1. Post-accident Communication

When hardwired systems are used to meet the MINER Act requirement for redundant communication between surface and underground personnel, wires should be routed through separate entries or boreholes continuous to the surface. MSHA interprets the term "wireless," as used in the MINER Act, to mean that no wired component of the system exists underground where it may be damaged by fire or explosion. Post-accident communication technology would be considered acceptable if, based on its location in the mine and the history of mine explosions and fires in the mine, it is likely to withstand the event intact. A reasonable timetable for installation should be included in the plan.

This provision applies to all mines except anthracite mines with one intake and one return aircourse. In these mines, the redundant hardwired systems may be placed in the same aircourse.

#### 2. Post-accident Tracking

Until post-accident tracking technology becomes commercially available and MSHA approved, MSHA will accept a dispatcher system, or equivalent system, that has as a function the tracking of persons underground. A dispatcher system should track location of personnel in writing, on a map, or electronically, for the duration of the shift. The tracking system used by the operator should be able to determine the current, or the immediate pre-accident location of all underground personnel.

#### 3. Post-accident Breathable Air

##### *A. Maintenance of Individuals Trapped Underground*

For an ERP to be approved, it must specifically address the type, amount, and location of post-accident breathable air necessary to maintain individuals trapped underground for a sustained period of time. Oxygen, compressed air, or other alternatives may be used to meet this requirement.

On August 30, 2006, MSHA published a Request for Information (RFI) in the Federal Register seeking further information from the mining community on "topics related to post-accident breathable air that would be sufficient to maintain miners trapped underground for a sustained

period of time." Once MSHA is able to review the information received, the Agency will provide additional guidance. In the meantime, however, mine operators shall gather information from available resources and provide for emergency supplies of breathable air.

*B. Additional SCSRs in Escapeways*

In addition to the two SCSRs provided on the section for each miner as required by the emergency temporary standard, the plan should provide for storage of SCSRs at 30 minute intervals in escapeways. MSHA interprets the MINER Act phrase that "caches of self-rescuers providing in the aggregate not less than 2 hours per miner to be kept in escapeways from the deepest work area to the surface at a distance of no further than an average miner could walk in 30 minutes" to mean that one-hour of oxygen per miner should be provided at each SCSR storage location in each escapeway.

The table below provides allowable 30-minute travel distance intervals. Please note that the distances in this table vary from those provided in P06-V-9.

<b>Distances for SCSR Storage Locations</b>	
<b>Average Seam Height (inches)</b>	<b>Distance in Feet (30 min.)</b>
Crawl - less than 40	2200
Duck walk - 40 to 50	3300
Walk head bent - 51-65	4400
Walk Erect - more than 65	5700

The above table is based on the 1995-1996 NIOSH/MSHA study summarized as "The Oxygen Cost of a Mine Escape" Kovac, Kravitz, Rehak (1997). It does not apply to mines with grades over 5%. In post-accident evacuation situations, miners could encounter smoke, dust, fallen materials and disorienting surroundings, impeding their evacuation. The mental and physical condition of the miner in a mine emergency could contribute to additional oxygen use. In addition, the slope of escapeways miners must travel vary, potentially increasing the amount of oxygen consumed. This derated distance table derived from the study takes these factors into account to determine an acceptable 30 minute travel distance between SCSR storage locations.

Alternatively, a functionality test may be used to determine the distance that an “average miner” could travel in 30 minutes. The mine operator should calculate this distance by using the average distance that a representative sample of miners walks in 30 minutes over a portion of the mine that is representative of each escapeway. A representative sample of miners would be a cross-section of the population of all miners who would have to evacuate the mine and use the SCSRs stored in the escapeways. In other words, the sample should include miners of various ages, weights, fitness levels, and smoking habits. In general, it is appropriate for mine operators to include at least 20 miners in the walking trial in order to obtain an accurate representation of the entire mine population. If the workforce is 20 or fewer, all miners should be included in the walking trial. A representative portion of the escapeway would have an entry height, slope, and underfoot conditions similar to those of the entire escapeway.

### *C. Other SCSR Considerations*

The ERP should contain a provision for storage of at least one SCSR provided at no further than 30 minute travel distances for the evacuation of miners such as pumpers or examiners working in remote areas at locations accessible to these personnel in bleeders and other remote areas of the mine.

The ERP should contain a provision adopting the manufacturer's recommendations for SCSR maintenance, routine examinations, storage, and retirement. The ERP should also address SCSR performance by specifying a schedule for opening, initiating the breathing cycle, and establishing operational reliability for a representative number of SCSR units on an annual basis. Units at the end of their service life, if available, may be used for this purpose. The ERP should also provide for replacement of retired SCSRs with technologically advanced SCSRs as they become commercially available and are approved for use in mines.

#### 4. Post-accident Lifelines

MSHA interprets the "flame-resistant" lifeline requirement of the MINER Act to mean that lifelines must meet the requirements of 30 CFR 18.65. Consistent with the MINER Act, operators may continue to use lifelines on order or in use at the mine until the lifelines are replaced, or the statutory three-year period has elapsed.

Where directional cones are used to meet the requirement for directional lifelines, the ERP should be consistent with the National Institute for Occupational Safety and Health's (NIOSH) recommendation that directional cones are to point in the inby direction. See *Emerging Technologies: Aiding Responders in Mine Emergencies and During the Escape from Smoke-Filled*

Passageways by Ronald S. Conti, National Institute for Occupational Safety and Health.

5. Training

The ERP should contain provisions for training in evacuation procedures for all persons prior to going underground. This provision does not apply to Federal and state government officials or to short-term visitors who have appropriate SCSR and hazard training and are taking a tour accompanied by knowledgeable operator officials. This training should be conducted quarterly and can be part of the mine emergency evacuation training under 30 CFR 75.1502.

In addition, the ERP should include SCSR hands-on training in donning and transferring from one SCSR to another for each type of SCSR carried or stored in the mine. Training should demonstrate the proper insertion of the mouthpiece and emphasize the importance of keeping the mouthpiece inserted until reaching fresh air.

The ERP should contain a provision that one of the quarterly training drills on donning of SCSRs will take place in artificial smoke or an environment simulating smoke. Also, where possible, the ERP should provide that a training unit that replicates actual conditions of use will be used for this training. The ERP should contain a mechanism to assure that all training on the ERP procedures was conducted.

6. Local Coordination

Consistent with the MINER Act, the ERP shall include procedures for notifying key personnel, such as a call list for mine rescue teams, local emergency responders, mine personnel, state and federal officials, and other parties that may be required.

Consistent with the MINER Act, the ERP shall include the procedures the operator will follow to familiarize local emergency responders with surface functions that may be required in the course of mine rescue work, such as logistics, traffic control, and supplies on the surface. Operators should make every effort to arrange on-site visits by local emergency responders to familiarize them with the surface facilities at the mine and the functions that may be required of the responders.

The ERP should include a provision to provide MSHA with advance notice of on-site activities related to local emergency response coordination so that MSHA has the opportunity to observe or participate.

## 7. Additional Plan Content Provisions

To provide for the maintenance of miners trapped underground, the ERP should include the following for each working section:

1. Two inflatable stoppings or other quick deployable barricade units should be provided within 6 months of becoming commercially available. Until these units are available, sufficient barricading materials to construct two air-tight barricades; the barricading material shall, at a minimum, include 4 brattice boards equal to the entry width, brattice cloth, sealant material, eight roof jacks, powered spad gun with sufficient spads, trowel and protective gloves, two claw hammers and nails, and 240 pounds of rock dust;
2. Inflatable shelters or equivalent may be used in lieu of barricading materials or other quick deployable units;
3. Food and potable water sufficient for a sustained period of time; and
4. First-aid kits, blankets, multi-gas detectors, and chemical light-sticks or other effective permissible light sources.

The ERP should include a list of readily available suppliers of mine emergency and rescue equipment. A means for satisfying this requirement is to include a copy of MSHA's Mine Emergency Operations (MEO) database information for the mine in the ERP.

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The ERP should include plans for post-accident logistics and coordination that at a minimum address: the location, necessary equipment, and security of the command center; the facilities available to accommodate families and the security for families of the affected miners; the location for the press; and the arrangements for traffic control.

### *Emergency Response Plan - Approval Procedure*

The MINER Act specified that ERPs be developed and adopted no later than 60 days after the date of enactment of the Act (August 14, 2006). Once submitted, the plan is considered to be adopted by the mine operator and the operator should begin to implement its plan where possible by obtaining equipment, showing a purchase order for the purchase of equipment, or conducting training as appropriate. As MSHA reviews the Plans, the Agency will send approval letters notifying mine operators of the ERP provisions found to be in compliance with the MINER Act. Furthermore, approved ERP provisions are fully effective, and are also subject to enforcement. Inspectors will check for compliance during subsequent inspections.

ERP provisions that have not been approved and have not been included in the approval letter are still being carefully reviewed by MSHA. MSHA will send a deficiency letter to the mine operator explaining which items have not been approved

and what additional information should be included when the provisions are resubmitted to MSHA.

### **Background**

On June 15, 2006, the MINER Act became effective. Section 2 of the MINER Act amends Section 316 of the Mine Safety and Health Act of 1977 to address emergency response plans.

Paragraph (b)(2) of Section 2 of the MINER Act requires that not later than August 14, 2006 (60 days after the date of enactment), each underground coal mine operator shall develop and adopt a written emergency response plan that provides for the evacuation of all individuals endangered by an emergency and the maintenance of individuals trapped underground in the event that miners are not able to evacuate the mine.

### **Authority**

The Federal Mine Safety and Health Act of 1977, 30 U.S.C. 801 as amended by the MINER Act, Pub. L. No. 109-236, June 15, 2006, 120 Stat. 493.

### **Internet Availability**

This program policy letter may be viewed on the World Wide Web by accessing the MSHA home page (<http://www.msha.gov>) and by choosing "Compliance Info" and "Program Policy Letters".

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### **Distribution**

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