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PROCEDURE INSTRUCTION LETTER NO. I11-V-06

FROM:

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SUBJECT:

Inspection of Post-Accident Communication and Electronic
Tracking Systems

Scope

This Procedure Instruction Letter (PIL) applies to Coal Mine Safety and Health (CMS&H) District Managers, Supervisors, Specialists, and Inspectors.

Purpose

This PIL provides instructions for Mine Safety and Health Administration (MSHA) enforcement personnel during inspections of two-way communication and electronic tracking systems. Information gathered during inspections should be used to determine whether the systems are installed, maintained, and operated in compliance with approved Emergency Response Plan (ERP) provisions relating to communication and tracking. Information gathered during inspections can also be used to support revision to the ERP in light of new mining conditions or methods whenever necessary or during the six-month ERP review.

Procedure Instructions

Enforcement personnel should prepare for inspection or evaluation as follows:

- Review the provisions contained in Program Policy Letter (PPL) P11-V-13, *Guidance for Compliance with Post-Accident Two-Way Communication and Electronic Tracking Requirements of the Mine Improvement and New Emergency Response Act*

(*MINER Act*). The PPL provides guidance and cannot serve as the basis for a citation.

- Review the ERP to become familiar with the communication and tracking provisions.
- Identify all locations where system components should be installed.
- If a map is provided with the ERP showing the location of system components, consider taking a copy of the map to the mine.
- Review applicable MSHA approval information, if specified in the ERP, and document approval numbers and any applicable conditions of use.

Records Review

- Review the manufacturers' checklist(s) for both the post accident communication system and the electronic tracking system.
- Review the established manual tracking procedure for miners assigned to work in bleeders or other remote areas of the mine that are not provided with electronic tracking coverage.
- Review mine examination record books over a reasonable period of time to determine trends and other significant variations. For example, records should be checked to determine whether system failures were promptly addressed. Records need not list each component, but rather should contain a general statement indicating that the system had been examined and any failures that render the system inoperative or diminish its capability are recorded.
- Verify that weekly (or other interval specified in the ERP) examinations of the systems' infrastructure were recorded.
- Review the tracking data to determine that it is being stored for 2 weeks (or other interval specified in the ERP). This includes tracking data for miners who have used the manual tracking procedure.

Communication and Tracking Surface Facility (75.1600)

- Verify that communication and tracking systems are operational.
- Conduct a trial communication with someone underground.
- Review the emergency communication broadcast procedure.

- Ask the responsible person at the communication facility to verify the number of miners currently underground and to show the location of all miners on the graphical user interface or through other means provided by system's software, including miners not in system coverage areas. The responsible person for communications and tracking is a person who is trained in the operation of the communication and tracking systems. This person is always on duty when miners are underground and can receive incoming messages and respond immediately in the event of an emergency. This person is not the same responsible person required under 30 C.F.R. Section 75.1501.
- Ask the responsible person at the communication facility to display the update rate of the tracking system.
- Verify that the responsible person at the communication facility can communicate with all individuals or groups of people underground.
- Ask the responsible person at the communication facility to explain the emergency message procedure.
- Verify that tracking devices can provide or display low power warnings.
- Verify that each person is uniquely identified by the tracking system and that the tracking system provides the last known location for each miner who is underground. This should be available through the graphical user interface or through other means provided by the system's software.
- Verify that required lightning arrestors are properly installed.
- Verify that the person assigned to monitor the post-accident communication and tracking systems is fully capable of operating the system.
- Ensure that a responsible person on the surface is always on duty when miners are underground to provide communications (75.1600-1). If the responsible person performs duties away from the communications center, verify that they remain in contact with the system at each outside location, (e.g., inside all equipment cabs, in the shop, etc.,) and can immediately attend to alerts.

Inspection Activities

- Compare the ERP communication and tracking system provisions to the system components as actually installed. Identify and record differences.
- Identify locations where communication and electronic tracking system components are installed and determine whether coverage in the working

sections, primary and alternate escapeways, and other strategic areas indentified in the ERP is provided in accordance with the ERP.

- Verify that the communication and tracking system is operational by attempting to communicate with surface personnel at random locations in the coverage area and by comparing your route of travel with electronic records when arriving on the surface. A copy of the tracked area should be maintained in the inspection file. A copy of current miner location should be printed out to facilitate the inspection.
- Verify that communication and tracking components are protected against forces that could cause damage if located in vulnerable areas such as in front of seals that are less than 120 psi.
- Verify that system components are properly identified as MSHA approved in accordance with 30 C.F.R. Part 23.
- Verify that communication and tracking systems have adequate backup power capacity to ensure operation during fan stoppages or a mine power outage for the period of time specified in the ERP. Verify that the backup power supply is adequately charged.
- Discuss, with miners, mine management, and representatives of the miners, the performance of the systems and corrective actions for compliance.
- Interview miners to determine if they have experienced any problems with the systems.
- If the tracking system is used to comply with the Identification Check System requirement of 30 C.F.R. § 75.1715, check that the identification number on the miner's belt and the electronic tracking system number are identical by conducting a spot check of a few miners.
- Ensure that the system complies with existing grounding, short circuit protection and other applicable requirements. Check length of cables and determine if protective devices are adequate and operate as specified in the Part 23 approval.
- Ensure that systems are installed to prevent interference with blasting circuits in accordance with the approved ERP and manufacturers' instructions.

- Ensure that an untethered communication device is readily accessible to each group of miners working or traveling together and to any individual miner working or traveling alone.
- Ensure an audible, visual and/or vibrating alarm is activated by an incoming signal on each untethered communication device. Each untethered device should be capable of receiving an emergency message.
- Ensure two-way voice and/or two-way text messaging capabilities are operational.
- Ensure that two operable communication systems are available for use inside each refuge alternative. (75.1600-3)
- Depending on the systems installed, various functionality checks can be observed by the inspector such as:
 - De-energize a node/reader to determine whether the device reverts to standby power, whether the communication system provides redundancy, and whether the system at the surface identifies the de-energized device.
 - Operate a node/reader on standby power to ensure the systems continue to operate.
 - De-energize a tracking device or remove it from a coverage area to verify that its last known location is accurately reported.
 - Disable or de-energize line power for the systems at the surface to ensure that they continue to operate on standby power.
- Make certain that all tests are conducted according to manufacturer recommendations.

Background

The Mine Improvement and New Emergency Response (MINER) Act of 2006 includes the following requirement for communications and tracking systems:

Not later than 3 years after the date of enactment of the Mine Improvement and New Emergency Response Act of 2006, a[n emergency response] plan shall, to be approved, provide for post accident communication between underground and surface personnel via a wireless two-way medium, and provide for electronic tracking system permitting surface personnel to determine the location of any persons trapped underground or set forth within the plan the reasons such provisions can not be adopted. Where such plan sets forth the reasons such provisions can not be adopted, the plan shall also set forth the operator's

alternative means of compliance. Such alternative shall approximate, as closely as possible, the degree of functional utility and safety protection provided by the wireless two-way medium and tracking system referred to in this subpart.

On April 28, 2011, MSHA issued PPL P11-V-13 to provide guidance for mine operators to meet the MINER Act requirement. Mine operators have developed revised ERPs that provide for the use of communication and tracking systems that comply with the MINER Act's requirement. A number of underground coal mine operators have fully installed such systems, and other operators are expected to have these systems fully installed by June 15, 2011. MSHA personnel must take steps to assure that these systems provide the protection mandated by the MINER Act and specified in the operator's ERP.

Authority

Section 316 of the Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 876; and 30 C.F.R. parts 23, 75, and 77.

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