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PROGRAM INFORMATION BULLETIN NO. P12-09

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SUBJECT: Phase-out Plan for CSE SR-100 SCSRs used in Mining Applications

**Who needs this information?**

Mine operators, independent contractors, Mine Safety and Health Administration (MSHA) personnel, and miners' representatives should have this information.

**What is the purpose of this Program Information Bulletin?**

MSHA is issuing this PIB to alert the mining industry about the results of a National Institute for Occupational Safety and Health (NIOSH)/MSHA study to evaluate the oxygen starter system on the SR-100 Self-Contained Self-Rescuer (SCSR), in which SR-100 oxygen starters failed to operate in 5 out of 500 units tested. MSHA and NIOSH agree that action is needed to assure the safety and health of miners, and that the SR-100 SCSR must be phased out of use in a timely and orderly manner. In addition, NIOSH has determined that the manual start procedure for the SR-100 should only be used as a last resort. The manufacturer's manual start procedure (a.k.a. the Cold Start procedure), is more difficult to activate and it may take more time for the SR-100 SCSR to generate sufficient oxygen to allow for a rapid escape. MSHA wants to assure that miners are trained to know what to do if they have a problem starting their SR-100 SCSR.

**Information**

MSHA is requiring action to assure that miners have adequate SCSR protection while SR -100 SCSRs are being phased out in coal and metal and nonmetal mines. These

actions shall be implemented as soon as practicable, but not later than 30 days after issuance of this PIB. The actions outlined in this PIB are a continuation of practices required in earlier MSHA and NIOSH notices, and MSHA's directions to the agency's enforcement staff, including PIL NO. I10-V-15.

***Actions to protect coal miners who do not have a fixed work location and who wear/carry SR-100s with additional SCSRs provided in accordance with 30 C.F.R. § 75.1714-4(a)(2):***

- For miners, without fixed work locations (examiners, pumpers, etc.), within 30 days of the issuance of PIB No. P12-09, a mine operator must either replace the SR-100 SCSR with any other approved 1-hour SCSR or provide an additional SR-100 SCSR so that these miners wear or carry a total of two SR-100s.
- If necessary, the mine operator may temporarily borrow SR-100s starting from the farthest outby caches. SR-100s can be borrowed from both primary and alternate escapeway caches; however, other outby caches can also be used in a manner that maintains maximum protection for miners. Units borrowed from outby caches must be replaced as soon as possible.
- If any approved plans are affected by implementing the measures described above, then a mine operator will need to submit necessary revisions to the appropriate District Manager within 30 days from the date of PIB No. P12-09. Plans that may be affected include the Emergency Response Plan (ERP), the Mine Emergency Evacuation and Firefighting Program of Instruction (30 C.F.R. § 75.1502), SCSR Storage Plans under 30 C.F.R. §§ 75.1714-2(e) and 75.1714-2(g)(2), and Training Plan revisions pursuant to 30 C.F.R. § 48.3(p).

***Actions for phase-out of all CSE SR-100s used in mining applications:***

**1) No later than one year from the date of PIB No. P12-09, operators must:**

- Replace SR-100s with any other approved 1 hour SCSR in the following order of priority:
  - 1) SCSRs for miners who wear/carry SR-100 SCSRs and do not have a fixed work location, and along travel routes used by these miners as per 30 C.F.R. § 75.1714-4(a)(2).
  - 2) SCSRs for miners who wear/carry SR-100s and have fixed work locations, and SCSRs stored on mantrips.
- Begin replacements in caches beginning with those for working sections.

**2) No later than December 31, 2013, operators must:**

- Finish phase-out of SR-100s. No SR-100s should remain in any mine after December 31, 2013.

**3) For Metal and Nonmetal mines, operators must:**

- Replace all SR-100s by December 31, 2013 for compliance with 30 C.F.R. § 57.22315.

***Actions to protect all miners using SR-100 SCSRs:***

- Consistent with existing requirements and PIB No. P12-09, all coal miners should always have immediate access to a spare SCSR in case the first SR-100 SCSR they try to activate fails for any reason.
- When possible, all miners should immediately obtain another NIOSH/MSHA approved SCSR if they encounter any difficulty with the operation of any SR-100 SCSR.
- NIOSH has determined that the manual start procedure for the SR-100 SCSR should only be used as a last resort. The manufacturer's manual start procedure (a.k.a. the Cold Start procedure) is more difficult to activate and it may take more time for the SR-100 SCSR to generate sufficient oxygen to allow for a rapid escape. In the event that the starter oxygen fails to deploy or oxygen escapes through the mouthpiece due to improper donning, a miner's first recourse should be to use another available NIOSH/MSHA approved SCSR. **The limitations of the manual start and the proper procedures for manually starting the SR-100 SCSR must be emphasized to all miners, as soon as practicable, and in the quarterly training.** If the manual start procedure is used, the manufacturer's procedure must be followed explicitly.
- MSHA inspectors will check to make sure all miners are trained in the use of the manual start and to only manually start the SR-100 SCSR as a last resort if there are no other NIOSH/MSHA approved SCSRs available. If this procedure is used, the manufacturer's procedure must be followed explicitly.

**Actions to dispose of SR-100 SCSRs**

SR-100 SCSRs that are removed from service may not be reintroduced into any other industry. The SR-100 owners must follow the manufacturer's instructions for disposal of SCSRs that are removed from service.

**What is the background for this PIB?**

NIOSH and MSHA identified a potential problem with the starter oxygen system on a limited number of SR-100s which was later confirmed by tests and an investigation performed by CSE. CSE voluntarily stopped production of the SR-100. The availability

of sufficient start-up oxygen is a critical characteristic to performance of the SR-100. NIOSH developed a protocol to test for the prevalence of failure of the oxygen starter on the SR-100 and, with assistance from MSHA, began collection of five hundred devices (which had been deployed for use throughout the coal regions of the United States). These devices were subsequently tested for this assessment.

The evaluation was completed, and NIOSH published their report in April, 2012. There were 5 starter oxygen failures observed among the 500 units tested. The criterion for passing the test was that there should be 3 or fewer oxygen starter failures out of 500 units tested. Based on this identified deficiency, MSHA and NIOSH have determined that corrective action is needed.

MSHA and NIOSH have determined that an orderly phase-out will be more protective to the safety of miners than immediate withdrawal of the devices. Based on the recent NIOSH/MSHA study, less than 2 % of the population of SR-100s may be affected (at a 95% confidence level); therefore, it is likely that at least 98% of the SR-100 SCSRs have functional oxygen starters. The immediate availability of redundant SCSRs significantly increases the likelihood of all miners having access to functional SCSRs in the unlikely event of a mine emergency.

#### **What is MSHA's authority for this PIB?**

The Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq.; 30 C.F.R. §§ 75.1714 to 75.1714-4, 57.22315, and 42 C.F.R. § 84.3.

#### **Internet Availability**

This PIB may be viewed on the Internet by accessing MSHA's home page at <http://www.MSHA.gov> and then choosing "Compliance Info and Program Information Bulletins."

#### **Who are the MSHA contact persons for this bulletin?**

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**Distribution**

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