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PROGRAM POLICY LETTER NO. P07-V-04

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SUBJECT: Revision of MSHA Program Policy Manual, Volume II, Section 18.45 – Insulation of Cable Reel and Spooling Devices

Scope

This program policy letter (PPL) is intended for Mine Safety and Health (MSHA) personnel, equipment manufacturers, rebuild shops, underground mine operators, underground independent contractors, miner's representatives, and other interested parties.

Purpose

This PPL is issued to refine MSHA's current policy concerning the insulation of cable reels and spooling devices under § 18.45(e). It addresses what parts of the cable reeling assembly need to be insulated with flame-resistant material and what parts may be isolated from the machine frame, if they are inaccessible to the mine personnel during operation of the machine.

Background

In 1981, MSHA developed a policy concerning the insulation of cable reels and related parts. The policy indicated that any part of the machine which the trailing cable normally contacts, such as the cable reel hub and flanges, cable guide, sheaves, and bar rollers, must be insulated to prevent voltage being placed on the machine frame from spot contact with a worn or damaged trailing cable. The policy required that the insulating material be tested and accepted by MSHA as flame-resistant. The policy also provided an exception to the insulation requirement. Isolated metal components, insulated from the machine frame, are acceptable if they are inaccessible to mine personnel during normal operation of the machine.

Recently MSHA identified a potential hazard in the cable reel area of shuttle cars. Shuttle cars often have guide rollers installed where the trailing cable enters the cable reel compartment housing the cable reel and spooling device. Shuttle car operators often clean mining materials from this area when the machine is at the dump point during the mining process. Some shuttle car designs incorporate metal guide rollers that are isolated from the machine with insulating bushings. These metal rollers can become energized if a damaged spot on the trailing cable rests on the rollers. Although the isolated roller provides protection from ground faults on the machine frame, it does not protect against a shock hazard for the shuttle car operator when cleaning this area from mining materials.

In order to address this potential shock hazard on shuttle cars, MSHA is revising its policy. In general, isolated components are not permitted in the area between the sheave wheels and the area housing the cable reel and spooling device. They are permitted only if the isolated parts are located away from contact by mine personnel while the cable reel area is being cleared of a buildup of mined materials.

It is important for shuttle car manufacturers to recognize that the area between the sheave wheels and the area housing the cable reel and spooling device is often cleared to remove mined material. This area can be a potential shock hazard to miners if an energized trailing cable is damaged and contacts a metal part in the vicinity of the area being cleared. Equipment manufacturers must therefore design their shuttle cars to address this hazard and notify appropriate mine personnel of the hazards associated with clearing this area of mined materials while the machine is energized.

Policy

This policy revises § 18.45 of the MSHA Program Policy Manual (PPM) as follows:
30 CFR § 18.45(e) requires cable reels and spooling devices to be insulated with flame-resistant material.

To satisfy the intent of this requirement, any part of the machine that the trailing cable normally contacts, such as the cable reel hub and flanges, cable guide, sheaves, and bar rollers, must be insulated to prevent voltage being placed on the machine frame from spot contact with a worn or damaged trailing cable. The insulating material shall be tested and accepted as flame-resistant by the Approval and Certification Center. Cable reel hub and flanges, cable guide, sheaves, and bar rollers may be made or formed from non-metallic flame-resistant insulating materials. Also, these parts may be made of metal provided the surfaces contacted by the cable are coated or lined with a flame-resistant material.

Isolated components, insulated from the machine frame, are acceptable if they are inaccessible to mine personnel while operating the machine. For shuttle cars, isolated components are not permitted in the area between the sheave wheels and the area housing the cable reel and spooling device. They are permitted if the isolated parts are located away from contact by the mine personnel. Since it is normal practice for mine personnel to clean mined material build up on bar rollers, these rollers must be insulated to prevent a damaged trailing cable from energizing the rollers. In this case the bar rollers are not considered isolated.

Authority
Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq.,
30 C.F.R. §§ 18.20 and 18.45(e).

Filing Instructions
This PPL should be filed behind the tab marked "Program Policy Letters" at the back of Volume II of the PPM.

Internet Availability
This PPL may be viewed on the World Wide Web by accessing the MSHA home page (http://www.msha.gov) and choosing "Compliance Info" and "Program Policy Letters."

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