

EFFECTIVE DATE: 5/6/2011
LAST VALIDATED: 03/29/2024

EXPIRATION DATE: 3/31/2026

PROGRAM POLICY LETTER NO. P11-V-14

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SUBJECT: Water Sprinkler Fire Protection of Underground Belt Conveyors
and Belt Takeup Storage Units

Scope

This Program Policy Letter (PPL) applies to all miners, miners' representatives, Coal Mine Safety and Health (CMS&H) enforcement personnel, and underground coal mine operators.

Purpose

The purpose of this PPL is to clarify the requirements of Title 30 Code of Federal Regulations (30 C.F.R.) Sections 75.1101-7 and 75.1101-8 concerning the installation requirements for water sprinkler systems and arrangement of sprinklers on underground belt conveyors and belt takeup storage units. This PPL also clarifies the intent of the Mine Safety and Health Administration's (MSHA) Program Policy Manual (PPM) Volume V, Section 75.1101-8 regarding sprinkler systems arrangement of sprinklers. MSHA has determined that some belt takeup storage units do not have adequate fire protection because belt conveyor takeup storage units are not provided with sufficient protection and the wide belts may shield the sprinkler from suppressing a belt fire.

MSHA will be inspecting all belt takeup storage units to assure that adequate fire protection is afforded. This PPL is intended to answer questions, eliminate inconsistencies, and provide guidance to enforcement personnel and the mining industry.

Policy

The standards contained in 30 C.F.R. 75.1101 are derived from the statutory provisions 311(f) of the Act to prevent and contain fires primarily in underground belt entries where the danger of fire is particularly great; the rollers and bearings can get hot; the belt itself can burn; oil and grease are present; coal is transported on the belt; and the belt can slip. For these reasons, a fire protection system is required. When sprinklers are chosen as the method of protection, all of these reasons support having sprinkler protection over the entire length of both storage type and non-storage type belt takeup units since these units have all of the above hazards. The cited standard requires that at least one sprinkler be installed above each belt drive, belt takeup, electrical control, and gear reducing unit.

This PPL addresses the key elements for compliance with the requirements for water sprinkler systems and arrangements of sprinklers for underground belt conveyors and belt takeup storage units.

1. Two or more branch lines, at least one of which shall be above the top belt and one between the top and bottom belt, shall be installed in each sprinkler system to provide a uniform discharge of water to the belt. Wider belt conveyor installations may require more than one branch line directly over the top belt and between the top and bottom belts in order to provide a uniform discharge of water to the entire width of the belt surface.
2. The water discharged from the sprinklers shall be directed at both the upper and bottom surfaces of the top belt and to the entire upper surface of the bottom belt. The water discharge rate from the sprinkler system shall be a minimum of 0.25 gallons per minute per square foot of the top belt surface.
3. Each sprinkler system shall provide protection for the motor drive belt takeup storage unit, electrical controls, gear reduction unit, and the 50 feet of fire resistant belt, or 150 feet of nonfire-resistant belt adjacent to the belt drive.
4. In accordance with 30 C.F.R. 75.1101-7(a), each sprinkler system must be installed, to the extent practicable, in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems." NFPA 13 is the National Fire Protection Association consensus standard for installation of fire protection sprinkler systems. Among other things, this consensus standard provides guidance on locating sprinklers, dealing with horizontal or vertical obstructions to sprinkler discharge water, specifying allowable types of pipes and fittings, and presenting methods for determining minimum pipes sizes. The phrase "to the extent practicable" in the regulation should be interpreted to mean that all appropriate installation rules in the consensus standard

should be followed except where there is a compelling technical or physical reason requiring alternate methods or arrangements.

Unless MSHA has granted a petition for modification, the mine operator must comply with the standard.

Background

There has been inconsistency as to whether and what type of fire suppression over belt takeup storage units is required by the standard. Due to the increased width of conveyor belting, the increased length of belt takeup storage units, and the use of larger storage units as the result of the advance of belt conveyor technology, the potential exists that some sprinkler arrangements could be shielded from suppressing a belt fire and fail to satisfy the standard. The mining community has raised questions regarding fire protection requirements for underground belt takeup and belt storage units with respect to the adequacy of fire protection. The current standards specifically require each sprinkler system provide a uniform discharge of water to the belt surfaces which includes belt takeup storage units. Mine operators must assure that compliance is achieved.

Authority

The Federal Mine Safety and Health Act of 1977 and 30 C.F.R. Part 75.1101-7 and 30 C.F.R. 75.1101-8.

Filing Instructions

This PPL should be filed behind the tab marked "Program Policy Letters" at the back of Volume V of the Program Policy Manual.

Internet Availability

This PPL may be viewed on the Internet by accessing the [MSHA Home Page](#) and choosing "Compliance Info" and "Program Policy Letters."

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