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SUBJECT: Re-Issue of P09-30 - Short Circuit Protection For Trailing Cables
Longer Than 500 Feet

Who needs this information?

Underground mine operators, miners' representatives, mine equipment manufacturers, mine equipment rebuild facilities, and Mine Safety and Health Administration (MSHA) enforcement personnel should have this information.

Why is MSHA issuing this bulletin?

This Program Information Bulletin (PIB) clarifies the application of Title 30 of the Code of Federal Regulations (30 C.F.R.), Section 18.35(a)(5) and Tables 8 and 9 in Appendix I of Part 18 for determining instantaneous settings of circuit breakers for short-circuit protection of portable (trailing) cables. Trailing cables used to conduct electric energy to permissible face equipment shall be provided with short circuit protection set as close as practicable to the maximum starting inrush-current value for the machine. Normally, the instantaneous trip setting for the circuit protective device should not exceed the values specified in Table 8 in Appendix I of Part 18. According to a footnote in this table, higher circuit breaker settings may be permitted for special applications when justified.

The MSHA Approval and Certification Center (A&CC) has had a number of inquiries from mine equipment manufacturers and mine equipment repair facilities concerning the use of short circuit protective device settings that are higher than those listed in Table 8 of Part 18 for permissible equipment supplied power through trailing cables exceeding 500 feet in length. MSHA recognizes that improvements in technology and equipment design have made it feasible to adequately protect longer trailing cables. Engineering methods used to reduce inrush current sometimes prove to be ineffective and the use of a larger conductor size trailing cable for the equipment may not be feasible. In those situations, on a case by case basis, higher circuit breaker settings may be permitted by MSHA to protect extended length trailing cables for special applications, when justified. Since mine electrical system characteristics may vary from mine to mine and from power center to power center, a mine operator must demonstrate that the higher setting affords the same degree of protection as the setting for equipment having a trailing cable 500 feet or less in length for their specific mine.

What needs to be done to use trailing cables exceeding 500 feet in length with equipment protected by devices set at higher values than specified by Table 8 in Part 18?

Protection of trailing cables exceeding 500 feet in length that use devices set at values higher than those specified by Table 8 may be evaluated by MSHA as part of an approval action submitted to the A&CC by the equipment manufacturer, or the mine operator may file for a field modification. There are two different types of field modifications that may be considered, depending upon the situation:

A District Field Modification may be processed by the MSHA District Office for increased trailing cable lengths beyond those specified in the approval documentation for the equipment, but not exceeding the maximum values specified in Table 9 of Part 18. In this situation, a mine operator must notify the MSHA District office in writing prior to changes being made. MSHA enforcement personnel will then verify that the longer length trailing cable is installed in a workman-like manner and that the circuit breaker setting affords the same degree of protection as the same setting for equipment having a trailing cable 500 feet or less in length. A record of the operator's notification, the inspection, and acceptability of the changes must be placed in the mine file.

A formal field modification must be submitted to the MSHA A&CC for any other changes in equipment design that require the trailing cable circuit breaker settings to be increased beyond the maximum values specified in Table 8 of Part 18. The short circuit protection must be set as close as practicable to the maximum starting inrush-current value for the machine. Application procedures for mine operators to follow when submitting a formal field modification for these types of

modifications may be obtained by contacting the MSHA A&CC, Electrical Equipment Branch.

A mine operator must file a Petition for Modification under Section 101(c) of the Mine Act to modify 30 C.F.R. 75.503 or 57.22305 to use trailing cable lengths beyond those specified in Table 9 of Part 18.

What is the background for this bulletin?

There has been some confusion concerning the actions that must be taken in order to use trailing cables exceeding 500 feet in length on permissible electric equipment. Mine operators have been advised to obtain a formal field modification through the A&CC or a District field modification through the MSHA Districts and, in some cases, to file a Petition for Modification under Section 101(c) of the Mine Act to modify 75.503 or 57.22305. This PIB has been prepared to aid mine operators and equipment manufacturers in making the decision to choose the appropriate method to achieve compliance with the regulations in order to use extended length trailing cables. This bulletin also provides clarification of the intent of 30 C.F.R. 18.35(5) and the application of Tables 8 and 9.

What is MSHA's authority for this Program Information Bulletin?

The Federal Mine Safety and Health Act of 1977; 30 C.F.R. Part 18.35; 30 C.F.R. Parts 75.503 and 75.601; 30 C.F.R. Parts 57.22302, 57.22303, 57.22304, and 57.22305.

Is this Program Information Bulletin on the Internet?

This PIB may be viewed on the Internet by accessing the [MSHA home page](#) and choosing "Compliance Info" and "Program Information Bulletins."

Who is the MSHA contact person for this bulletin?

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Who will receive this bulletin?

MSHA Program Policy Manual Holders
Miners' Representatives
Underground Mine Operators
Manufacturers of Mine Equipment

Mine Equipment Rebuild Facilities
Special Interest Groups