Subject: RIN 1219-AB34 "Proposed Rule for High-Voltage Continuous Mining M achines"

To Whom It May Concern:

The proposed rule RIN 1219-AB34, High-Voltage Continuous Mining Machines, does not allow for use of a type trailing cable that was approved in Drummond Company, Inc. - Shoal Creek Mine petition posted at the following link - www.msha.gov/readroom/petitions/granted/m2001079c.htm. Within that petition under Section 15 part (2) a single jacketed cable is described. Below is an excerpt of the portion of the Drummond Company, Inc. - Shoal Creek Mine petition that shows the approved single jacketed cable language.

15. The high-voltage trailing cable shall be designed as follows:

(1) The high-voltage trailing cable shall have 100 percent semi-conductor tape shielding and metallic braid shielding coverage over each insulated power conductor;

(2) The jacket shall consist of two reinforced layers, an outer and inner protective jacket. ***A single jacketed cable, suitable for use underground, may be permitted by the District Manager when the tear strength of the outer protective jacket is more than 100 pounds per inch thickness and the tensile strength is more than 4000 pounds per square inch. The District Manager may periodically review the suitability of the single jacketed cable and may require that the use of double layered jacketed cables;***

(3) The color black shall not be used for any protective jacketing layer; and,

(4) The inner-most layer of two-layered protective jacketed cables shall be colored a distinctive color from the outer jacket to allow easy recognition of damaged areas to the outer protective jacket insulation

This single jacket type cable utilizes a TPU jacket material which has excellent tensile strength, tear strength and abrasion resistant qualities. These qualities are very important in preventing cable damage to begin with. A two jacketed designed cable, as is suggested in the proposed rule part §18.54 (f) (4), cannot be manufactured utilizing the TPU jacket compound.

The TPU jacketing compound is described below in detail as compared to other jacketing compounds. This information was acquired from Amercable's website with their permission.

Physical Properties of Jacketing Compounds

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Tensile strength is the maximum stress of rubber components during destructive testing. A good tensile value indicates, among other things, the general toughness of a jacket. Tensile strength is

measured on small specimens and calculated out to pound per square inch (psi).

Elongation at rupture is the ultimate extension of the rubber specimen prior to destruction. In a cable, the copper conductors carry the entire load and will break long before the jacket's ultimate elongation is reached. In actual service, the elongation value does not play a big role. Elongation, when coupled, with tensile, shows the "state of cure" of the jacket when compared to ICEA (Insulated Cable Engineers Association) minimums, a very high elongation and low tensile can indicate an under cured jacket. Conversely, a very low elongation coupled with high tensile may indicate an over cured cable jacket.

Modulus, or tensile strength at 200% elongation of the rubber specimen, gives a good indication of the strength of the material even under mild elongation. Modulus is most important where 1) forces are known to elongate the copper and, hence, the jacket, and 2) where the cable is bent in a tight radius. In either case, if the outer jacket is subjected to abrasion and/or cutting, low modulus can negatively affect jacket life.

Tear strength is measured in pound per inch thickness and is an ICEA requirement for extra-heavy-duty rubber jackets. Heavy-duty jackets do not have an ICEA tear requirement. As far as overall durability, tear probably tells more than any single ICEA test. Jackets that have good tear strength usually have good abrasion resistance also. Good compounding and on-target curing will achieve excellent tear and abrasion performance. However, when selecting a jacket, it is best to study all values. In nearly all cases, extra-heavy-duty material will perform better than heavy-duty material in the mechanical environments of flex, torsion, and abrasion.

Abrasion index is an indication of the abrasion resistance of a jacket compound. It is a number measured per ISO 4649, with lower numbers indicating higher resistance to abrasion. In severe mining applications an abraded jacket can lead to cable failure. Although it is not an ICEA requirement, it is an important element to consider in choosing an appropriate jacket material.

AmerCable utilizes several jacket materials that meet or exceed the Extra-Heavy-Duty requirements of ICEA. Typical values for each of these materials, as well as other important characteristics, are summarized in the following table. The ICEA minimum requirements are also listed for comparison.

Physical Properties of Jacketing Compounds

Tiger Tip M1005

Typical Values

Table I

	ICEA Minimums for EHD Jackets	Chlorinated Polyethylene (CPE)	Chlorosulfonated Polyethylene (Hypalon®)	**Thermoplastic Polyurethane (TPU)**	Natural Rubber
Tensile Strength, psi	2400	2900	3000	**5000**	3800
Elongation @ Rupture, percent	300	500	500	**500**	480
Modulus, psi @ 200%	700	900	900	**1100**	825
Tear Strength, lbs per inch thickness	40	50	50	**120**	86
Abrasion Index, per ISO 4649	no requirement	70	74	**15**	56

Table II

	Chlorinated Polyethylene (CPE)	Chlorosulfonated Polyethylene (Hypalon®)	Thermoplastic Polyurethane (TPU)	Natural Rubber
Ozone Resistance	Excellent	Excellent	Excellent	Fair
Sunlight Resistance	Excellent	Excellent	Good	Good
Flame Resistance	Good	Good	Fair	Poor
Heat Resistance	Good	Good	Good	Fair
Low Temperature Flexibility	Excellent	Excellent	Good	Excellent
Oil Resistance	Good	Good	Good	Poor
Colorability	Excellent	Good	Excellent	Poor

The District Manager granted the right to use the TPU jacketed cable as indicated in the petition. The TPU jacketed cable has been utilized at Drummond Company's Shoal Creek mine for well over two years on two high voltage JOY 12CM27 continuous miners without any incidences. This type of cable has been used on shuttle cars as well with great success. This type of cable helps greatly in preventing damage that would normally occur to standard jacketed cables.

We feel that it would be a grave mistake to now exclude this type of cable in the final rule. We respectfully request that this portion of the proposed rules be revised to include the ability to use the TPU jacketed cable.

Thank you for your consideration in this matter,

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