

## ELECTRICAL TASK FORCE RECOMMENDATIONS TO ENHANCE THE SAFETY OF UNDERGROUND CABLES

**Introduction:** The Bureau of Mine Safety Electrical Task Force was directed by the Board of Coal Mine Safety to make recommendations to enhance cable safety as defined in Act 55, Section 334(c).

### What cables need to be addressed?

*Options:*

- 1) As Section 334(c) of the BCMSA states, all underground cables.
- 2) All cables being powered from the face load centers.
- 3) Just cables on mobile face equipment.

### Non- Reeled Face Equipment:

*Option 1*

Install Sensitive Ground Fault Protection (SGFP): This will provide additional or enhanced protection for individuals who come in contact with faulty cables or equipment and, in addition, will provide enhanced protection to individuals who accidentally come into contact with energized components while performing maintenance or troubleshooting.

*Option 2*

Shielded Cable

*Option 3*

Options 1 and 2 combined would provide maximum enhanced cable safety utilizing available technology

*Option 4*

Either SGFP or shielded cables

### Reeled Face Equipment:

*Option 1*

Install Sensitive Ground Fault Protection (SGFP): This will provide additional or enhanced protection for individuals who come in contact with faulty cables or equipment and, in addition, will provide enhanced protection to individuals who accidentally come into contact with energized components while performing maintenance or troubleshooting.

*Option 2*

SGFP combined with semi-conductive cable. Semi-conductive cable will carry a limited fault current through the sheath. From the previous cable safety study, it appeared that the General Cables new enhanced #2 AWG Type W Round Cable performed satisfactory, but there were issues encountered with troubleshooting faults in the cable and in performing cable splices. The cable held up well and performed well from a safety perspective. Some of the difficulty in splicing was attributed to a manufacturing issue that has been addressed.

*Option 3*

Either SGFP or Shielded cables

### Summary:

The Task Force could not arrive at a consensus on which options should be implemented.