

Longwall High Voltage Cable Splicing Technical Specifications

1) Purpose: This document provides the technical specification that shall be followed pertaining to splicing High Voltage cables associated with long wall mining operations in the Commonwealth of Pennsylvania.

2) Scope/Definitions: This document is limited to the following defined cables.

- a. The exposed shearer power cable (*shearer cable*) that travels in the 'Bretby'.
- b. Power cables between the power center and the stage loader (*power cables*).
- c. The shearer and tail gate cables enclosed in the pan line enclosure (*enclosed cables*).

3) Definitions:

- a. Splice: A temporary repair made with an MSHA approved wrap or cold pour kit.
- b. Jacket Repair: A repair involving the outer jacket only and not involving any conductor, the conductor's insulation or the shielding.
- c. Shearer Cable: After the second splice is made in the shearer cable beyond the stage loader the Operator shall remove the splices or replace the cable within 7 days. A splice may not be made within 50 feet of the shearer cable entry.
- d. Power Cables: A maximum of four (4) splices are allowed in the power cables. After the second splice is made in any individual power cable the Operator shall remove the splices or replace the cable(s) within 7 days.
- e. Enclosed cables: A total of two (2) splices in each of the enclosed cables (shearer and tailgate). After the second splice is made in either cable the Operator shall remove the splices or replace the cable(s) within 7 days.
- f. Removed splice: A splice is considered 'removed' when it is cut out and the cable is re-entered or a repair is made by a manufacturer's authorized vendor.
- g. After the fifth splice is made in any one cable the Operator shall remove the splices or replace the cable(s) on the cable which has the two (2) splices, prior to the beginning of the next shift.
- h. If a splice is made within fifty (50) feet of the stage loader or in any exposed cable within 50' of a motor at or beyond the stage loader, the Operator shall remove the splices or replace the cable within 7 days.

4) Training: The individual performing the splice must be an MSHA-qualified person who has received specific task training. The training must be hands on and proficiency evaluated. This specific task training must be documented and maintained at the mine for inspection as prescribed in CFR 30 Pt. 48.9.

5) Splice Materials: The splice kit must be MSHA approved for this application. Proper sized connectors must be supplied with the kit.

6) Required Equipment:

- a. A splicing fixture or 'jig' shall be made available and used when conditions permit.
- b. A suitable crimping tool with dies correctly sized for the connectors
- c. Proper task lighting
- d. PPE as required

7) Testing: The spliced cable must pass a nationally recognized testing standard before being placed into service. The results must be documented.

8) Regular Checks: The ground fault protection circuit associated with a spliced cable must be checked prior to each operating shift for proper operation. An automatic insulation/ground fault test relay which prevents circuit energization shall be acceptable. The splice shall be inspected weekly.

9) Documentation of the splice: The splice must be documented in the Permissibility Book with the following information:

- a. Time/Date
- b. The name of the individual who performed the splice
- c. Location: Shearer Cable: shield number with shear parked at headgate
Power cables: linear distance from stage loader
Enclosed Cable: shield number
- d. Insulation resistance test value for the phase(s) to ground
- e. If a repair is made by a manufacturer's authorized representative this will be noted
- f. Countersigned
- g. The book shall be available at the mine for inspection

Approved by the Task Force [Established by authority of ACT 55 Section 350 (d)]

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