

Trolley and direct current and alternating current feeder wires shall be installed as follows:

1. On the opposite side of the entry from shelter holes and clearance space, except where $6\frac{1}{2}$ feet or more above the rail or adequately guarded at shelter holes.

2. The hangers on curves shall be spaced so that the trolley wire may become detached at any one hanger without exposing the locomotive operator to a shock hazard.

3. Trolley wires and trolley-feeder wires shall be alined properly and installed at least 6 inches outside the track-gage line.

4. Provided with cut-out switches at intervals of not more than 2,000 feet and near the beginning of all branch lines.

5. Kept taut and not permitted to touch the roof, rib, or cross bars; particular care shall be taken where they pass through door openings to preclude the possibility of bare wires coming in contact with combustible material.

6. Trolley wires and trolley feeder wires shall be guarded adequately where it is necessary for men to pass or work under them regularly, unless the wires are more than $6\frac{1}{2}$ feet above the top of the rail. They shall also be guarded adequately on both sides of doors.

7. Shall not extend beyond the last open crosscut and shall be kept at least 150 feet from pillar workings.

8. Anchored securely and insulated properly at the ends.

9. Not in air known to contain 1.0 per cent or more methane or in air returning from pillar recovery work or old workings where dangerous amounts of methane may be liberated suddenly.

117. Grounding. Metal conduit and metallic coverings and armor of cables shall be grounded effectively, and shall be electrically continuous to afford a conductor path for the ground circuit.

Metallic frames, casings, and other electric equipment that can become "alive" through failure of insulation or by contact with energized parts shall be grounded effectively.

Casings of transformers shall be grounded effectively unless protected by isolation (freedom from contact hazard by position). Mining equipment mounted on rubber tires or caterpillar treads, receiving power through a trailing