BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

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OPEN WIRE
REMOVAL

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GENERAL

This Addendum is issued to provide instructions for classifying and removing copper line wire in such a manner as to preserve the condition of wire that is suitable for reuse.

6. CLASSIFYING COPPER LINE WIRE BEFORE REMOVAL

6.01 Copper line wire, after being removed, will generally be utilized in one of the following ways:

(a) Reused as line wire after minor reconditioning in the field: Only wire which is known to be in very good condition will be utilized in this way, for example, wire on which few, if any, repairs are required other than removal of a limited number of twisted sleeve joints.

(b) Reused as line wire or buried shield wire after being returned to the shop for reconditioning. This would include, for example:

(1) Wire which is in good condition except for appreciable wear at many of the tie points, wire which contains more twisted sleeve joints than can economically be cut out in the field at the time of removal, etc.

(2) Wire such as described in (a) above which is to be sent to the storercom rather than being reused immediately as line wire.

(c) Turned in as junk because it is known to be unsuited for reuse as line wire or buried shield wire. For example, wire which has been damaged repeatedly by storms; wire containing many closely spaced sleeves such as is often the case where wires have been retransposed several times; wire, which according to trouble records, has broken with excessive frequency; and wire which has been subject to excessive corrosion, such as wire at crossings over main lines of steam railroads, or wire in the vicinity of certain industrial plants.

6.02 It is necessary to decide, before starting removal operations, what disposition is to be made of the wire, as this will govern the practices followed during removal. Decisions as to whether the wire is suited for reuse as line wire or buried shield wire, or whether it should be turned in for junk, might be based on information gathered from the following sources:

(a) discussions with employees familiar with the history of the wire,

(b) review of the trouble records, and

(c) inspection of the wire to determine whether it contains an excessive number of sleeves and to check the condition of the wire at tie points.

6.03 A tag should be securely attached to each coil of wire removed, indicating clearly the intended disposition. The marking should be in accordance with the following:

(a) Wire which is to be reused as line wire without reconditioning, other than that done during its removal (See 6.01 (a)), should be marked "Reuse."

(b) Wire which is to be reconditioned in the shop before being reused as line wire or buried shield wire (See 6.01 (b)) should be marked "Repair."

(c) Other wire (See 6.01 (c)) should be marked "Junk."

It will generally be desirable to record on tags attached to coils of wire intended for "Reuse" or "Repair," the size and weight of the wire in each coil.

7. REMOVING WIRE WHICH IS TO BE REUSED OR REPAIRED

7.01 At the time the wire is being untied, remove all tie wires, bridging connectors and bridle wires.

7.02 Care should be exercised in handling wire which is to be reused or repaired to avoid damaging it unnecessarily. The same precautions should be taken as are exercised in handling new wire; these include:

(a) Avoid stepping on the wire or running over it with vehicles.

(b) Avoid kinking the wire or bending it too sharply.

(c) Avoid dropping heavy or sharp objects onto the wire which might nick or flatten it.

(d) Avoid dropping coils of the wire onto sharp edged objects, for example, rocks and tools, which might nick it.

(e) Do not drag the wire over rocky terrain.

(f) Do not pull the wire around transposition brackets or steel pins at corner poles; move the bracket or wire so that it will pull against a wooden pin or place a piece of burlap or canvas so as to protect the wire.

(g) Do not pull the wire over point transposition brackets; to provide a means of separating the wires, drive a 30d nail into the top of the crossarm between the bracket and the adjacent pin.

(h) Avoid damage from tools or other equipment during transit.

7.03 All wire intended for reuse or repair should be wound into coils (maximum weight 185 lbs.) containing but a single wire (two or more wires shall not be wound into the same coil).

7.04 Wires may be coiled up by one of two methods, namely,

(a) By pulling the wires over the crossarms onto a take-up reel.

(b) By dropping them to the ground and then winding onto a take-up reel. Use of this method is necessarily limited to cases where dropping the wires to the ground will not interfere with traffic or pedestrians, and where the ground surface is not so rocky as to damage the wires when they are being wound up.

7.05 When the wires are to be withdrawn by pulling them over the crossarms, some of the things which should be done and taken into consideration include:

(a) After untying the wires spread them out over the crossarm so that there is a pin or pole separating each wire from the one adjacent to it. See 7.02 (g).

(b) It will generally be found desirable to employ some means to prevent twisted sleeve joints from catching on crossarms; three methods commonly used include:

(1) Placing a tape wrapping around the ends (the ends toward the take-up reel) of sleeves that can be reached from the crossarms.

(2) Placing a tie of marline or binding twine around the line wire ahead of each joint, that is, between the joint and the first crossarm that it will be pulled over.

(3) Replacing twisted sleeve joints by rolled sleeve joints before beginning to pull out the wire. Where there are two twisted sleeve joints within 50 feet, it will generally be desirable to replace the two joints by a single rolled sleeve joint by cutting out the short intervening section of wire.

(4) Placing a U Cable Guard over the leading edge of the crossarm. Each end of the guard should be tied to the crossarm with a strap made of webbing material or a piece of rope or marline. For 5 wires or less, located on the same side of the pole, use one 5-ft. guard on each pole; for 6-10 wires place a 5-ft. guard on each side of the pole.

(c) The number of wires that may be wound up simultaneously ranges from one to ten, depending upon the type of equipment available.

(d) The length of section pulled out at one time should, of course, be as long as practicable, say, at least one-half mile where favorable conditions prevail. Some of the factors to be taken into consideration in determining the length of section include:

(1) The size and number of wires.

(2) Location and number of corners and amount of pull on each corner.

(3) Number and abruptness of changes in grade.

(4) Accessibility to motor vehicle equipment.

(5) Likelihood of hindering traffic.

(6) Location of obstructions such as main highways, railroads, and power crossings where it is generally necessary, for safety reasons, to remove the wire in short sections and to employ special precautions and equipment.

(e) Attach a drag line of 3/8-in. or 1/2-in. manila rope, about 100 feet in length, to each wire at the opposite end from the take-up reel. Tape the junction of the drag line and wire to keep it from catching on crossarms and transposition brackets; to prevent this junction from catching at insulators it may be desirable to unscrew each insulator about one turn. Except when wires are being removed from the top crossarm, it will generally be desirable to stiffen the last four or five feet of the free end of the drag line by wrapping it with tape to keep it from hitching onto crossarms or transposition brackets.

(f) Generally it is not desirable to wind up the wire at a speed in excess of 150 feet per minute.

7.06 When wires are to be wound onto coils after being dropped to the ground, points to be taken into consideration include:

(a) As a rule, wires from one crossarm only should be dropped to the ground at one time. If wires are to be removed from more than one arm, wires from the upper arm (or arms) may be untied and moved into a position between the two outer pins; these wires may be lowered to the ground with a Wire Raising Tool after the wires dropped to the ground initially have been wound onto the take-up reel.

(b) If practicable, reel up simultaneously all wires which have been dropped to the ground on the same side of the pole. If this cannot be done the ends (those farthest removed from the take-up reel) of wires which are to remain on the ground while others are being reeled up should be snubbed to a pole or some other convenient anchorage.

(c) Wind up the wires attached to the take-up reels initially. If the ends of these wires are reached before the coil has attained the desired weight, splice them to the ends of wires remaining on the ground with rolled sleeves. Remove the snub from the other ends of these wires and proceed as before.

7.07 All coils should be carefully tagged as directed in Paragraph 6.03. Coils should be securely bound in at least four places with twine or copper wire. (Do not bind coils of copper wire with steel wire.)

8. REPAIRING LINE WIRE IN THE FIELD

8.01 Following are practices to be observed when wire, such as described in 6.01 (a), is being reconditioned in the field:

(a) Examine carefully the first three or four spans of wire removed for nicks, cracks and wear at tie points. If this examination indicates that the wire is not in good enough condition to be reused, without major reconditioning, its classification should, of course, be reconsidered. Make such examinations often enough to be sure that there is no appreciable change in the condition of the wire being removed.

(b) Cut out all twisted sleeve joints and replace them by rolled sleeve joints. When cutting out twisted sleeve joints, cut the line wire about 8 inches beyond the joint.

(c) Cut out and avoid including any section of wire which is less than 50 feet between splices.

(d) Wind the wire into coils having an eye 19-20 inches; in order to prevent distortion of the coils it will generally be desirable to bind them before removing them from the take-up reels.

(e) Cut out all bends having a radius of less than 3/4 inch.

9. PRECAUTIONS

9.01 Follow carefully all safety precautions prescribed in Section G31.505 when removing wires crossing over electric light, power or trolley wires or guys, railroads, streets and heavily traveled highways.