SAFETY PRECAUTIONS OBSERVATIONS AND VOLTAGE TESTS TO BE MADE AT JOINT USE POLES

CONTENTS

1. GENERAL

1.01 This practice provides information pertaining to observation and tests to made at joint use poles to protect Company personnel from electrical shock.

1.02 This practice is reissued to replace in its entirety CTSP 490-050-106, Safety Precautions—Voltage Tests To Be Made Before Climbing Joint Use Poles. **Remove from the file and destroy all copies of CTSP 490-050-106, Issue 1, 1968.**

1.03 For information pertaining to the description, testing, care and storage of the B Voltage Tester, refer to CTSP 405-503-350.

2. SAFETY PRECAUTIONS

2.01 When performing tests with the B Voltage Tester:

a. Wear proper head protection (safety cap).

b. Wear safety glasses.

c. Wear insulating gloves consisting of:

(1) Cloth glove liner (optional).

(2) High voltage insulating (synthetic rubber) gloves.

(3) Leather protector gloves.

2.02 When it is necessary to ascend a pole to perform tests with the B Voltage Tester, observe the climbing precautions provided in CTSP 490-025-110.

2.03 Insulating gloves are not to be used when ascending or descending the pole. Lineman's leather gloves are to be used when climbing. When voltage tests are required aloft, ascend the pole and maintain a distance of 60 inches from voltage potential. Remove the lineman's leather gloves, put on insulating gloves, and proceed with tests using the B Voltage Tester.

3. OBSERVATIONS

3.01 Examine the pole for potential hazards such as a ground wire, metallic conduit or street light fixtures. Also observe the pole for potential hazards such as improper clearances from power conductors or equipment, dangling wire, etc.

3.02 If a ground wire is present, make a voltage test as instructed in paragraph 4. Voltage tests are not required when the following conditions exist:

a. The power ground wire is bonded to a telephone cable strand.

b. The power ground wire is covered with a wood molding, or equivalent, up through the telephone space.

c. The ground wire is insulated and insulation is in good condition.

3.03 If a power conduit is present, make a voltage test as instructed in paragraph 4.

3.04 If a light fixture is present, make a voltage test as instructed in paragraph 5 only if the pole is supporting telephone cable, urban wire, rural wire, an isolated section of cable, or a bare ground wire.

3.05 Voltage tests are not required when the following conditions exist:

a. The light fixture is located in power space.

b. It is clearly visible that the light fixture is bonded to the telephone cable strand and is located **above** telephone attachments.

c. When the light fixture is located below telephone cable, it must be clearly visible that the light fixture is bonded to the telephone cable strand and the wiring through and below the telephone space is 40 inches out from the surface of the pole or is inaccessible.

4. VOLTAGE TESTS AT THE BASE OF THE POLE

4.01 When a voltage test is required from observations in paragraph 3.02 or 3.03, it shall be made as follows **before climbing or working on the pole:**

a. Attach the insulated clip of the B Voltage Tester (Figure 1) to one of the following:

(1) A telephone anchor rod or guy. (Do not attach to an anchor rod or guy that is bonded to the power ground wire.)

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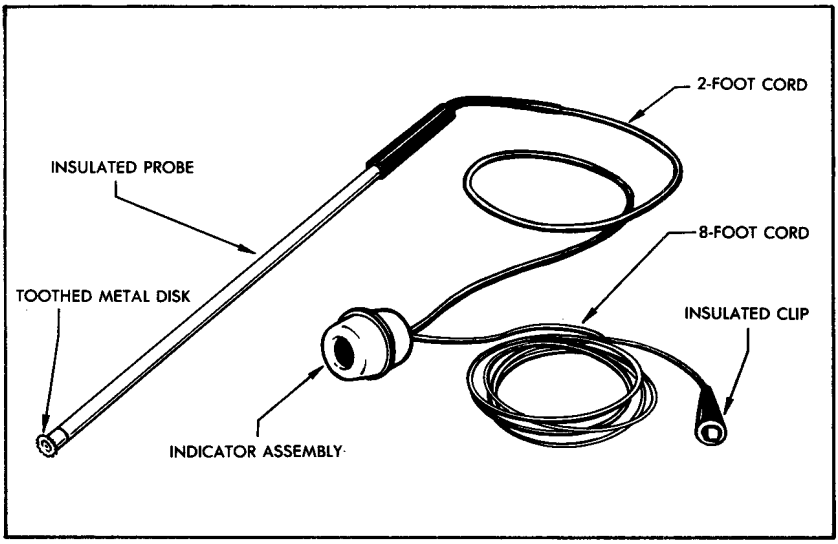

FIGURE 1. B Voltage Tester

(2) A fire hydrant, a projection on a manhole cover, or a metallic curb box.

(3) A 5-inch screwdriver blade pushed into the earth about 5 feet from the pole (Figure 2).

(4) A substantial metal object such as a piece of lead sleeving, a metal crossarm brace, or a half-pound bar of D seam solder, etc., and lay the object on the ground or pavement about 5 feet from the pole.

b. Standing about 3 feet from the pole, grasp the insulated probe in one hand and the indicator assembly in the other. Touch the toothed metal disk on the end of the probe to the ground wire, metal conduit, and pole being tested, and look into the open end of the indicator assembly.

c. If the indicator glows, the ground wire, metal conduit or pole is energized. Immediately remove the probe from contact with the ground wire, metal conduit or pole. **Do not climb or contact pole if the indicator glows. Notify your supervisor.**

d. If the ground wire is broken at ground level, test the upper portion.

e. If the lower 8 feet or so of the ground wire is protected with a wood molding, test above the molding.

4.02 If the voltage tester does not glow in performing the above test, the pole may be climbed as instructed in CTSP 490-025-110.

CAUTION: Care should be taken to avoid contacting the ground wire on metal conduit and telephone strand, cable or guys at the same time as a small voltage (of less than 60 volts) may be present. This caution is recommended to avoid possible surprise shocks.

4.03 If a shock is experienced as a result of an accidental contact between the ground wire or metal conduit and telephone strand, cable, guy or other grounded object, **notify your supervisor.**

5. VOLTAGE TESTS AND PRECAUTIONS ON THE POLE

NOTE: Attach B Voltage Tester bag containing test equipment and the bag containing insulating gloves to body belt.

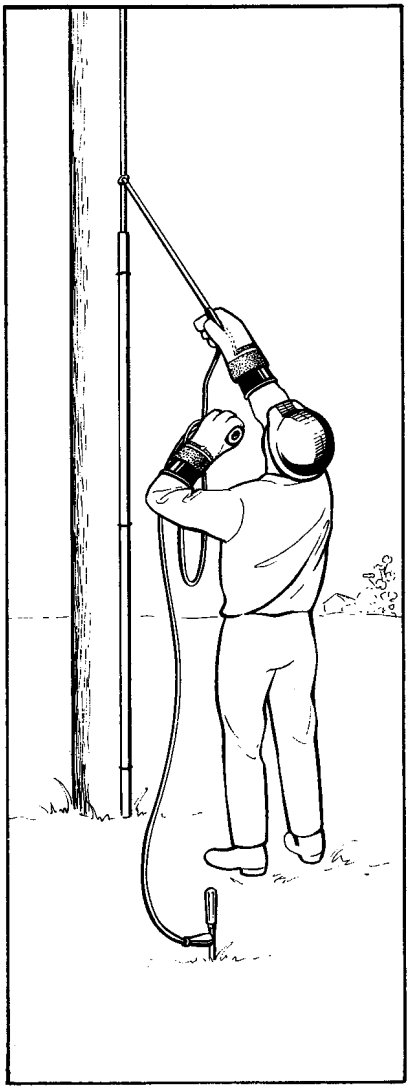

FIGURE 2.

5.01 Climb pole (as instructed in CTSP 490-025-110) to location approximately 60 inches from the potential hazard. Put on insulating gloves and proceed with test as instructed below.

CAUTION: Take care to avoid contacting hardware or wiring that could be energized.

5.02 When a voltage test is required for a light fixture as mentioned in paragraph 3.04, use the following procedure:

a. Attach the insulated clip of the voltage tester to the cable suspension strand support bracket or urban or rural wire or bare vertical power ground wire. Touch the toothed metal disk to the street light fixture and promptly look into the open end of the indicator assembly.

b. If the indicator does not glow, contact the fixture with the probe again to be sure that good contact has been made. If the indicator still does not glow, make a temporary bond as described in paragraph 5.03.

5.03 The B Temporary Bond is a 5-foot length of stranded copper, rubber covered cord with battery clips at each end. To use the B Temporary Bond, proceed as follows:

a. Make a temporary bond by attaching the small clip of the B Temporary Bond (Figure 3) to the cable suspension strand or the bare power vertical ground wire so as not to be in the way of work operations. **Do this first.** Then attach the larger clip of the bond wire to the street light fixture. **Do not bond** to the support bracket of urban or rural wire or the suspension strand of isolated cable.

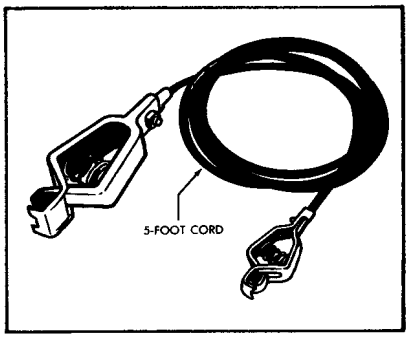

FIGURE 3. B Temporary Bond

b. Insulating gloves may be removed **only after** the temporary bond is in place, and then only if other protection requirements permit. Leave the B Temporary Bond in place until all work operations have been completed. Should the bond start smoking during the work operation, descend immediately without touching the fixture or its wiring. **Notify your supervisor.**

5.04 The B Voltage Tester is extremely sensitive and operates with very small currents. Street light fixtures may cause the indicator to glow even though they are energized only by leakage across damp cobwebs or induction between the fixture and its wiring.

5.05 For the condition mentioned in paragraph 5.04, the B Shunting Capacitor (Figure 4) is used to determine if the voltage present is excessive. To use the B Shunting Capacitor, proceed as follows:

a. Attach the clip of the B Voltage Tester and the clip of the B Shunting Capacitor to the cable suspension strand or to the bare power vertical ground wire.

b. Attach the small clip of the B Temporary Bond to the metal terminal of the B Shunting Capacitor and the larger clip to the metal cap behind the disk of the insulated probe.

CAUTION: Maintain at least 1 foot of separation between the B Voltage Tester and the B Temporary Bond and B Shunting Capacitor.

c. Touch the toothed metal disk to the street light fixture and promptly look into the open end of the indicator assembly (Figure 5).

CAUTION: Avoid bodily contact with temporary bond or capacitor during test.

d. If indicator glows, the fixture is energized. Immediately remove the probe from contact with the fixture, replace testing equipment in the carrying case, descend the pole and **notify your supervisor. Avoid contact with the fixture or its wiring.**

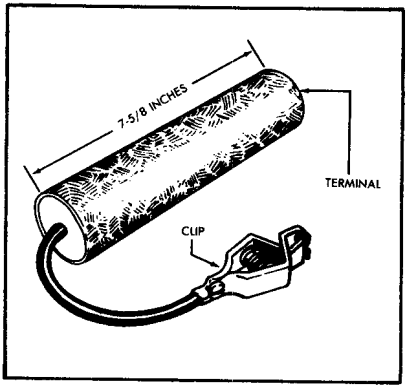

FIGURE 4. B Shunting Capacitator

e. If the indicator does not glow, contact the fixture with the probe again to be sure that good contact has been made. If the indicator still does not flow, proceed as instructed in paragraph 5.03.

5.06 When work operations are completed on a pole, remove the B Temporary Bond as follows:

a. Put on insulating gloves.

b. Remove the clip attached to street light fixture. **Remove this clip first.**

c. Remove the other clip.

CAUTION: If a spark is noticed when removing the bond, descend the pole immediately and notify your supervisor.

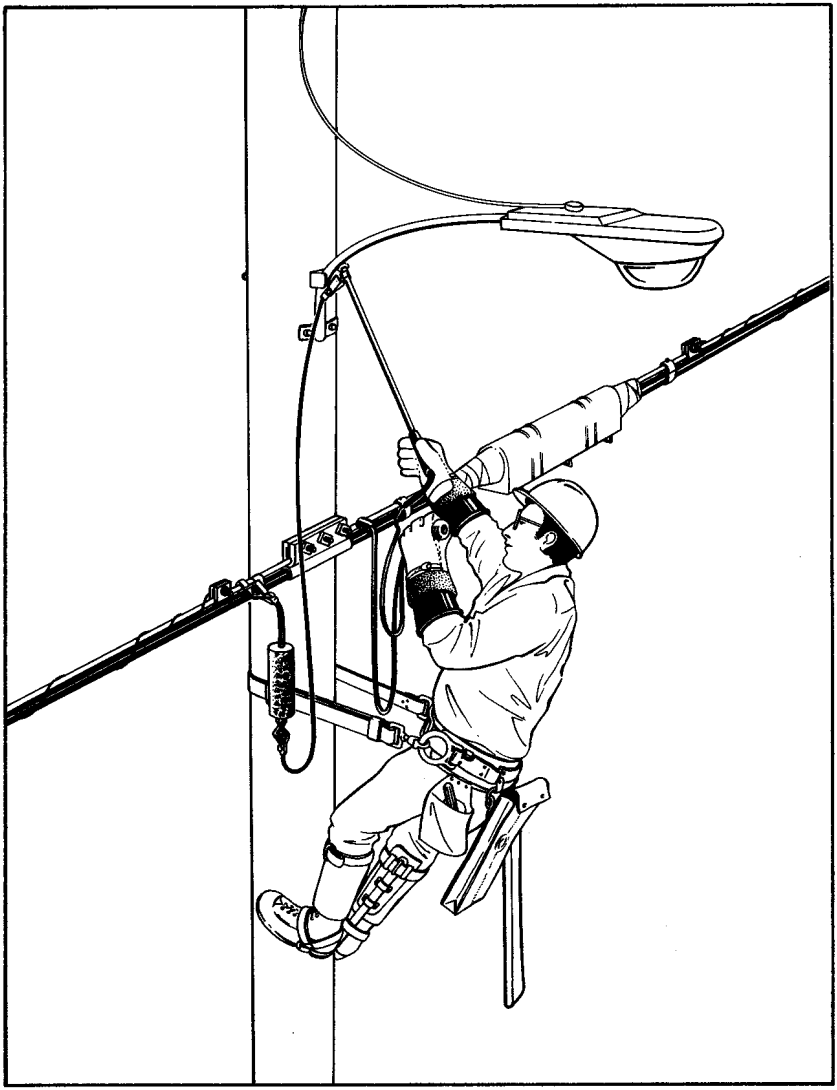

FIGURE 5.