

## Interpretation of the Electrical Safety Committee – May 2008

### Use of Voltage-Rated Gloves -120V Single Phase Circuits

#### Summary

Voltage measurements may be made on electrical equipment operating at or below 120 V, single phase, and having a bolted short circuit current of less than 10 kA if the following conditions are met:

- The test equipment and probes have a voltage rating of at least 250 Volts.
- The probes are designed so that the tester's hands cannot slip off the probe.
- The only exposed energized parts the tester can come into accidental contact with are those being measured.
- The tester's hands may never cross the restricted Approach Boundary (RAB), which is "avoid contact" for 120 volt circuits.

#### Relevant Codes Sections

**NFPA 70 E** Article 130.2 (C) Approach to Exposed Live Parts Operating at 50 Volts or More:

No qualified person shall approach or take any conductive object closer to exposed live parts operating at 50 volts or more than the Restricted Approach Boundary set forth in Table 130.2 (C), unless any of the following apply:

- 1). The qualified person is insulated or guarded from the live parts operating at 50 volts or more (insulating gloves or insulating gloves and sleeves are considered insulation only with regard to the energized parts upon which work is being performed), and no uninsulated part of the qualified person's body crosses the Prohibited Approach Boundary set forth in Table 130.2 (C).
- 2). The live part operating at 50 volts or more is insulated from the qualified person and from any conductive object at a different potential.
- 3). The qualified person is insulated from any other conductive object as during live-line bare-hand work.

#### Discussion / Analysis

The voltage-rated insulation on the test equipment effectively insulates the tester from the energized parts being measured. Since the RAP for 120 volts is "avoid contact" holding the insulated probes excludes crossing the RAP with an uninsulated part. The insulation on the test probe provides the same or better

## **Interpretation of the Electrical Safety Committee – May 2008**

protection from exposed energized parts as the insulation on a 120 volt line cord, the manipulation of which does not require voltage-rated gloves. The EFCOG guidance paper clearly allows measurements without voltage-rated gloves if the four conditions listed in the interpretation summary above are met.

### **Reference**

### **EGCOG—Electrical Safety Position ?Guidance Paper 2008-01, Issued January 24, 2008**

This guidance represents the consensus understanding of the Electrical Safety Subgroup of the EFCOG Environmental, Safety and Health Working Group.

### **REFERENCE**

NFPA 70E, 2004 Edition 130.7 (C) Personal Protective Equipment

### **QUESTION**

Are insulated gloves required to be used when using voltage-rated test equipment?

### **ANSWER**

Insulated gloves (voltage rated) would be required under any of the following:

- 1). When the probes of the meter/insulated device are designed so that the employee's hand can slip off the end of the insulated handle (OSHA letter)
- 2). When there are other exposed energized parts that the employee's hand might contact during testing (OSHA Standard Interpretation letter dated 5/20/1996)
- 3). If the employee's hands cross the Restricted Approach Boundary. (NFPA 70E 130.2.C)