OSHA requires safe work practices, but it is the NFPA 70E®: Standard for Electrical Safety in the Workplace® that specifies safe work practices for arc flash. NFPA 70E Article 130.5(C) requires arc flash warning labels to be posted on each piece of electrical equipment that may be worked on while energized, or when verifying power is off.

Minimum label requirements:

1) At least one of the following:
   a) Available incident energy and the corresponding working distance
   b) Minimum arc rating of clothing
   c) Required level of PPE
   d) Highest Hazard/Risk Category (HRC) for the equipment

Exception: Labels applied prior to September 30, 2011, are acceptable if they contain the available incident energy or required level of PPE.

Unfortunately, putting only the minimum required information on the label can leave workers without essential information. It makes more sense to include all of the information, including incident energy, hazard risk category, required level of PPE and the specific PPE items required. In addition, it is good practice to include shock and arc flash boundaries, available fault current, voltage level and assessment date.

**Arc Flash Boundary**

Arc Flash Boundary is an approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electric arc flash were to occur.

**Required PPE (Personal Protective Equipment)**

Employees working in areas where electrical hazards are present are to be provided with and use Arc-Rated (AR) protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed.

**Hazard Risk Category**

The Hazard Risk Category level is determined by ATPV (Arc Thermal Performance Value). ATPV is the measure (in cal/cm²) of how much heat can be exposed to a flame resistant garment before a second degree burn injury is expected to occur. HRC is based on specific job tasks and ranges from HRC 0 (which is low risk and allows for 100% untreated cotton), up to HRC 4 (which is high risk and requires Arc-Rated clothing with a minimum arc rating of 40).

**Incident Energy**

Incident Energy is a measure of thermal energy at a working distance from an arc fault (measured in cal/cm²). The working distance is the distance from where the worker stands to the flash location (commonly 18 inches). The incident energy is a function of system voltage, available short-circuit current, arc current, and the time required for circuit protective devices to open.

**Glove Class**

Electrical safety gloves are categorized by the level of voltage protection they provide and whether or not they’re resistant to ozone. Voltage protection is broken down into six classes. Class 00 is the least protective, while class 4 provides the most protection.
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