Working on electrical equipment that is energized is a major safety concern in the electrical industry. This requirement alerts electrical contractors, electricians, facility owners and managers, and other interested parties to some of the hazards present when personnel are exposed to energized electrical conductors or circuit parts. It emphasizes the importance of turning off the power before working on electrical circuits. This section does not apply to equipment in dwelling units. However, multifamily dwellings, which include multiple dwelling units, could have the same electric service as a commercial office building. The intent is to provide warnings to electricians working on these larger services.

Δ **(B) Service Equipment and Feeder Supplied Equipment.** In other than dwelling units, in addition to the requirements in 110.16(A), a permanent arc flash label shall be field or factory applied to service equipment and feeder supplied equipment rated 1000 amperes or more. The arc flash label shall be in accordance with applicable industry practice and include the date the label was applied. The label shall meet the requirements of 110.21(B).

Informational Note No. 1: See ANSI Z535.4-2011 (R2017), *Product Safety Signs and Labels*, for guidelines for the design of safety signs and labels for application to products.

Informational Note No. 2: See NFPA *70E*-2021, *Standard for Electrical Safety in the Workplace*, for applicable industry practices for equipment labeling. This standard provides specific criteria for developing arc-flash labels for equipment that provides nominal system voltage, incident energy levels, arc-flash boundaries, minimum required levels of personal protective equipment, and so forth.

The available short-circuit current must be known at the time of installation to comply with the interrupting requirements of 110.9 and 110.10. See the Application Example below 110.10. This information is necessary to determine the incident energy and working distance for compliance with *NFPA 70E* for future work on the service equipment. Section 110.16(B) specifies the information that a label is required to provide. The date that the label was applied is important because, over time, available fault current can change. Exhibit 110.9 is an example of the label required by this section.

EXHIBIT 110.9 Arc flash label in compliance with 130.5(H) of *NFPA 70E* and inclusive of the label application date as required by 110.16(B) of the *NEC*.

N **110.17 Servicing and Maintenance of Equipment.** Servicing and electrical preventive maintenance shall be performed by qualified persons trained in servicing and maintenance of equipment and shall comply with the following:

(1) The servicing and electrical preventive maintenance shall be performed in accordance with the original equipment manufacturer's instructions and information included in the listing information, applicable industry standards, or as approved by the authority having jurisdiction.
(2) The servicing and electrical preventive maintenance shall be performed using identified replacement parts that are verified under applicable product standards. The replacement parts shall comply with at least one of the following:
   a. Be provided by the original equipment manufacturer
   b. Be designed by an engineer experienced in the design of replacement parts for the type of equipment being serviced or maintained
   c. Be approved by the authority having jurisdiction

Informational Note No. 1: For equipment that is not listed or field labeled, or for which components are no longer available from the original equipment manufacturer, one way to determine suitability is to review the documentation that accompanies the replacement parts.

Informational Note No. 2: See NFPA 70B, *Recommended Practice for Electrical Equipment Maintenance*, for information related to preventive maintenance for electrical, electronic, and communication systems and equipment.

Δ **110.18 Arcing Parts.** Parts of electrical equipment that in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

Examples of electrical equipment that can produce sparks during ordinary operation include open motors that have centrifugal starting switches, open motors with commutators, and collector rings. Adequate separation from combustible material is essential if open motors with those features are used.

110.19 Light and Power from Railway Conductors. Circuits for lighting and power shall not be connected to any system that contains trolley wires with a ground return.

Exception: Such circuit connections shall be permitted in car houses, power houses, or passenger and freight stations operated in connection with electric railways.

N **110.20 Reconditioned Equipment.** Reconditioned equipment shall be permitted except where prohibited elsewhere in this *Code*. Equipment that is restored to operating condition shall be reconditioned with identified replacement parts, verified under applicable standards, that are either provided by the original equipment manufacturer or that are designed by an engineer experienced in the design of replacement parts for the type of equipment being reconditioned.

N **(A) Equipment Required to Be Listed.** Equipment that is reconditioned and required by this *Code* to be listed shall be