The nameplate provides the necessary information to size the branch-circuit or feeder conductors, the machine disconnecting means, and overcurrent protection. The computation of motor and nonmotor loads is reflected on the nameplate as full-load amperes, and no further calculation is necessary. Sizing of circuit conductors and overcurrent protection beyond the machine disconnecting means is under the scope of NFPA 79, *Electrical Standard for Industrial Machinery*.

670.5 Short-Circuit Current Rating.

(A) Installation. Industrial machinery shall not be installed where the available fault current exceeds its short-circuit current rating as marked in accordance with 670.3(A)(4).

(B) Available Short-Circuit Current Field Marking. Industrial machinery shall be legibly marked in the field with the available fault current. The field marking(s) shall include the date the available fault current calculation was performed and be of sufficient durability to withstand the environment involved.

670.6 Overvoltage Protection. Industrial machinery with safety circuits shall have overvoltage protection.

A study commissioned by the Fire Protection Research Foundation, "Data Assessment for Electrical Surge Protection Devices," provides results of a 2013–2014 survey of facility managers concerning surge damage. It shows that 26 percent had damage to safety interlocking systems on industrial machines due to surges. Safety interlocking systems are in place to protect workers and maintenance personnel from contact with exposed live parts and electric shock. The report can be found at www.nfpa.org/news-and-research.

ARTICLE 675

Electrically Driven or Controlled Irrigation Machines

Part I. General

675.1 Scope. This article applies to electrically driven or controlled irrigation machines, and to the branch circuits and controllers for such equipment.

Electric pump motors used to supply water to irrigation machines are covered by the general requirements of the *NEC*® and not by Article 675. Exhibit 675.1 shows an electrically driven irrigation machine, which is covered by the requirements of Article 675. An example of control equipment used for an irrigation machine is shown in Exhibit 675.2.

675.4 Irrigation Cable.

(A) Construction. The cable used to interconnect enclosures on the structure of an irrigation machine shall be an assembly of stranded, insulated conductors with nonhygroscopic and nonwicking filler in a core of moisture- and flame-resistant nonmetallic material overlaid with a metallic covering and jacketed with a moisture-, corrosion-, and sunlight-resistant nonmetallic material.

EXHIBIT 675.1 An electrically driven irrigation machine. *(Courtesy of Valmont Industries, Inc.)*

EXHIBIT 675.2 Example of control equipment for an irrigation machine. *(Courtesy of Valmont Industries, Inc.)*

The conductor insulation shall be of a type listed in Table 310.4(1) for an operating temperature of 75°C (167°F) or higher and for use in wet locations. The core insulating material thickness shall not be less than 0.76 mm (30 mils), and the metallic overlay thickness shall be not less than 0.20 mm (8 mils). The jacketing material thickness shall be not less than 1.27 mm (50 mils).

A composite of power, control, and grounding conductors in the cable shall be permitted.

(B) Alternate Wiring Methods. Installation of other listed cables complying with the construction requirements of 675.4(A) shall be permitted.

(C) Supports. Irrigation cable shall be secured by straps, hangers, or similar fittings identified for the purpose and so installed