City of Phoenix
PLANNING & DEVELOPMENT DEPARTMENT

Industrial Machinery
Electrical Inspection Interpretation

Issue Date:	**August 8, 2011; Revised August 2013**
Code/Section:	**2011 NEC Article 670**
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Issue:
In recent years Planning and Development staff have observed a trend toward the purchase and installation of foreign-manufactured **industrial machinery** by business owners in the City of Phoenix. In general, this machinery was not evaluated to standards employed by listing agencies in the United States during its manufacture. This does not mean the equipment is necessarily unsafe. Department staff also see equipment missing nameplates or lacking nameplate data required by **NEC 670.3.**

Definition:
Section 670.2 of NEC Article 670 defines an **Industrial Machine** as a power-driven machine (or a group of machines working together in a coordinated manner), not portable by hand while working, that is used to process material by cutting; forming; pressure; electrical, thermal, or optical techniques; lamination; or a combination of these processes. It can include associated equipment used to transfer material or tooling, including fixtures, to assemble/disassemble, to inspect or test, or to package. [The associated electrical equipment, including the logic controller(s) and associated software or logic together with the machine actuators and sensors, are considered as part of the **industrial machine**.]

Interpretation:
A permit is required for the installation or relocation of all **industrial machines** meeting the above definition. The **industrial machines/machinery** described in the above issue statement is allowed to be installed under the following conditions.

Section 670.3 of NEC Article 670 requires that a permanent nameplate shall be attached to the control equipment enclosure or machine and shall be plainly visible after installation. The nameplate shall include the following information:

1. Supply voltage, number of phases, frequency, and full-load current
2. Maximum ampere rating of the short-circuit and ground-fault protective device
3. Ampere rating of largest motor, from the motor name-plate, or load
4. Short-circuit current rating of the machine industrial control panel based on one of the following:
   a. Short-circuit current rating of a listed and labeled machine control enclosure or assembly
   b. Short-circuit current rating established utilizing an approved method
5. Electrical diagram number(s) or the number of the index to the electrical drawings

If the nameplate is missing, and if the Available Fault Current (AFC) at the point of connection of the branch circuit to the **industrial machine** is a maximum of 5,000 Amps, it is acceptable for a professional electrical engineer registered in the state of Arizona to evaluate the **industrial machinery** to determine the information to be placed on a new permanent nameplate. The new nameplate shall include the information required by **NEC 670.3, Items 1 through 3.** However, if the AFC at the point of connection is greater than 5,000 Amps, then a field evaluation by a Field Evaluation Body acceptable to the Building Official is required.

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