



MECKLENBURG COUNTY
Land Use and Environmental Services Agency
Code Enforcement

November 19, 2007

Department Directive on Industrial Machinery: field and office procedures related to SB 490/NCGS 143-138(b)

1. Enforcement Policy Effective Date

This policy is effective immediately and applies to all industrial machinery on any project.

2. General Assembly Law Change

On August 31, 2007 the NC General Assembly passed Senate Bill 490, a law which amended GS 143-138(b) (copy attached), AN ACT to clarify that Industrial Machinery is not subject to regulation under the Building Code. Mecklenburg County interprets this law to apply to all industrial machinery as defined in NEC 2005 Article 670.2, and part of a process producing a product, but not to other machinery. The new law effectively limits the enforcement jurisdiction with respect to industrial machinery, and consequently this enforcement policy outlines how we will proceed in our work within the limits of the new law described by SB 490(8.31.07).

3. Owner's declaration of equipment use and process description

Owner's may claim applicability of NCGS 143-138(b) by describing the physical characteristics of the equipment itself (size, weight, electrical nameplate data, and proposed location if within a building or space) and the step or procedure it provides for in the production process. This summary will be signed by the owner or officer of the business and maintained in the County's project records for future reference. The Department will notify the customer of any exceptions taken to the list, which is equipment we do not believe qualifies as "industrial machinery".

3.1 Appeal process

Owners may appeal the Department's decision on any exceptions taken to their "industrial machinery" list. The Department's appeal process is described at:

<http://www.charmeck.org/Departments/LUESA/CodeEnforcement/Code+Interpretations/Appeal+Process.htm>

4. For this Department Directive "industrial machinery" is defined as:

A) From NC GS 143-138(b), "industrial machinery" means equipment and machinery used in a system of operations for the explicit purpose of producing a product. The term does not include equipment that is permanently attached to or a component part of a building and related to general building services such as ventilation, heating and cooling, plumbing, fire suppression or prevention, and general electrical transmission."

B) From NEC 670.2: "Industrial Machinery (Machine). A power driven machine (or 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.)"

C) NEC 670.2 further identifies "Industrial Manufacturing System. A systematic array of one or more industrial machines that is not portable by hand and includes any associated material handling, manipulating, gauging, measuring, or inspection equipment".

Note: care must be taken to assure that machinery/equipment truly fits the above definition of industrial machinery.

4.1 Department definition of “producing a product”

Producing a product is key to understanding the above definitions of “industrial machinery” as well as creating a benchmark of what is or is not covered by the legislation and subsequently exempt from listing and labeling requirements (L&L). For the purposes of this Directive, we use the following:

“Producing a product is to modify or create a material or substance, that results in something tangible that is then used to produce something else, or it is sold at market.”

Based on the foregoing definitions of “industrial machinery” and assuming the machinery is part of an industrial process, these are some reference examples of “producing a product”;

4.1.1. These machines produce a product:

- A) Freestanding large knitting machines
- B) Extruders
- C) Manufacturing assembly lines
- D) Steel fabrication line process components
- E) Casting lines or process components
- F) Tooling machinery part of a line producing a product
- G) Equipment used in moving raw materials in support of a line producing a product
- I) material handling machinery, finishing machinery, and boilers, pressure vessels, furnaces, ovens and the like used exclusively for the manufacturing process
- J) Production by the use of industrial machinery to modify a material or substance by cutting; forming; pressure; electrical, thermal or optical techniques; or a combination of these processes.

4.1.2. The following are not considered an industrial machine or process

- A) Any process or production line, open to use by the public
- B) Restaurant food service
- C) Repair work such as auto body, automobile, electronics or appliances
- D) Healthcare diagnostic equipment
- E) Maintenance equipment
- F) Dry-cleaning establishments

5. Inspectors will enforce the following:

5.1 For industrial machinery not in place at final inspection: the inspector will apply code requirements to and inspect the building system wiring to the service point for the machine, which may be a junction box, panelboard, disconnect switch, terminal box, or similar connection point.

5.2 For industrial machinery in place at final inspection: the inspector will inspect as described above in item 5.1, and in addition, will inspect the final connection of the factory-installed industrial machinery wiring to the building electrical system, including wire size and ground connection, etc.

A) Inspecting the final connection may mean connection to a building system power distribution box, a separate utility service distribution, or it may be the direct connection of building power to the equipment, in which case the inspectors work with regard to the industrial equipment ends at this connection point.

B) In doing so, the inspector should apply the requirements contained in NEC including Article 670, with regard to machine nameplate data, clearances, as well as supply conductors and over current protection.

C) As referenced in NC GS 143-138(b), the inspector may refer a piece of industrial machinery to the NC Department of Labor (NCDOL) but they shall not hold up the certificate of occupancy based solely on that concern.

5.3 For stand alone projects (not part of a master permit): the inspector will inspect as described in items 5.1 and 5.2, and in addition when equipment is installed in an existing facility with no building system alteration, or after the CO is issued an electrical permit will be required so that the inspectors may check the connection to the existing building systems (as noted in 5.2 above).

- If placement of the machinery creates a violation of other NC Building Codes (building, mechanical, plumbing, fire), permits shall be obtained to correct the violation.
- Building systems alterations to accommodate the machinery shall be permitted as usual.

6. The Limits of Inspector’s Authority

For industrial machinery described in the foregoing items 3, 4, or 4.1, the inspector will not require any of the following:

- A) Listing or labeling by a third party testing agency of the industrial machinery, either shop or field
- B) Inspection of the industrial machinery by a design professional or other 3rd party inspection entity
- C) Product safety inspection of the industrial machinery.

Note: for clarification of terminology see the requirements of Article 10 Section 10 of the NC Electrical Code, Administrative Section

6.1 Field Procedure for determination of industrial machinery

- A) Field inspectors shall notify the owner's contractor of the Department Directive, if they receive a request to exempt a piece of equipment as industrial machinery.
- B) Field inspectors shall request the owner's declaration (described in part 3) from the owner's contractor.
- C) Upon receipt of the owner's declaration, the initial determination of acceptance or exceptions taken is to be made by the field inspector.
- D) If the field inspector is unsure of a piece of equipment, or if the owner disagrees with the determination, the inspector will contact the Electrical Codes Administrator or the Electrical Team Manager to assist in making the determination.
 - In either case, the inspector, Electrical Codes Administrator or Electrical Team Manager will visit the project to make a final determination.
- F) If the Department takes exception to the owner's list, that determination may be appealed as noted in part 3.1.
- G) If the electrical inspector observes an industrial machinery installation which the inspector considers unsafe, the inspector has the option of advising the owner (or owner's electrical contractor) and OSHA.

7. Commercial plan review responsibilities

Where projects indicate industrial machinery on the permit application construction documents, electrical commercial plan review staff will stamp a minimum of one electrical drawing as follows.

"The evaluation of industrial machinery is not a part of plan review or inspections per NC State General Statute 143-138(b) and the Mecklenburg County Code Enforcement Department neither has nor accepts any responsibility for the industrial machinery or its affects on the electrical system."

8. Owner Responsibility

This law is a significant change from past practice. Owners and installers of industrial machinery are responsible for the machinery and its safe connection to the building system. The County, the Code Enforcement Department and its staff accept no responsibility for industrial machinery. Owners will be provided with a statement from the Department, prior to issuance of the electrical Certificate of Compliance or Certificate of Occupancy informing them of the same.

9. Other State regulations regarding industrial equipment:

It should be noted that the statute does not exempt industrial machinery/equipment from federal regulation 29 CFR 1910.303. The NC Department of Labor has requirements which may apply to any industrial machinery installations.

Customers may obtain clarification of these requirements by contacting Kevin Beauregard, the Assistant Deputy Commissioner for the NCDOL at Kevin.beauregard@nclabor.com or go to www.nclabor.com.

Additional contacts: Tim Childers (Western Bureau Chief) – (336) 776-4420; Tom Hayes (Eastern Bureau Chief) – (919) 779-8512; OSHA - 919-807-2796 / 919-662-4309 / 800-NC-LABOR (800-625-2267)

10. Department contacts

David Rains, Electrical Supervisor Mega Team (704-309-4510)
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Bob Hartman, Electrical Supervisor Commercial Team (980-722-3618)
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Gary Mullis, Electrical Code Administrator (980-314-3098)
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FREQUENTLY ASKED QUESTIONS (FAQ) Industrial Machinery Policy

(1) What is Industrial Machinery?

Response: Equipment and Machinery used in a system of operations for the explicit purpose of producing a product. This term does not include equipment that is permanently attached to or a component part of a building and related to general building services such as ventilation, heating and cooling, plumbing, fire suppression or prevention, and general electrical transmission. See Section 4 of the Mecklenburg County Land Use and Environmental Services Agency Department Directive on Industrial Machinery for the full details of the definition of Industrial Machinery.

(2) What information is needed in a declaration statement?

Response: The name of the job or company, the address, the permit or project number from our office, the physical characteristics (size, weight, location etc.), the electrical nameplate data of the Machinery, any photos or cut sheets of the Machinery, and a description of the production process (from raw materials in, through, final product out).

(3) Does the inspector assume that all Machinery and equipment is non-industrial and therefore subject to listing and labeling requirements unless the owner submits a declaration statement per paragraph 3?

Response: Normally the inspector classifies the equipment as non-industrial; many things make up the determination of Industrial Machinery or equipment. Like what does the machine do, what does it produce, and many other factors. The owner shall provide the declaration statement for the equipment.

(4) If the field inspector classifies my equipment as Industrial Machinery am I required to still submit the owner's declaration?

Response: Yes, the owner's declaration is one of the inspectors determining factors and is required for each exemption.

(5) Is it possible for an owner to submit a declaration well in advance of an inspection in order to get a determination from the Department, and if necessary, go through the appeal process described in Part 3.1 before Machinery is actually put on the floor?

Response: Yes, this information may be submitted during the plan review stage of the project. However this does not guarantee a full determination can be made. A field evaluation may be needed for full determination. Also, if the information provided deviates from the actual field conditions this determination may change. This is consistent with any other code interpretations made by our Department. This will allow the owner additional time to navigate the appeals process.

(6) Can the department withhold a CO if the owner does not submit a declaration statement requesting exemption of Machinery?

Response: Yes, the declaration is a part of the process for full determination of Industrial Machinery.

(7) Can the department withhold a CO if there is an ongoing dispute that is under appeal per Part 3.1?

Response: If the dispute involves a determination by our Department that the equipment is or is not Industrial Machinery then the equipment is not permitted to be used, and the CO or TCO may not be issued unless ordered by a court of law or the North Carolina Department of Insurance.

(8) Are there any other circumstances relating to "Industrial Machinery" under which a CO can be withheld?

Response: No, for Industrial Machinery, however, code violations of other areas of the project that supply power to this Machinery such as improper disconnects, improper wiring methods, grounding issues, over current protection, classified areas, and location of the machine or other items may result in a CO or TCO not being issued.

(9) Does the SB 490 also exempt me from meeting other code requirements for my building?

Response: No, all other requirements of the North Carolina building codes have to be complied with such as egress, ventilation, fire suppression, floor load requirements, electrical service, feeder and branch circuit, handicap requirements and all other building codes issues.

(10) If my Industrial Machinery is exempt by North Carolina SB 490 do the OSHA requirements still apply to my equipment?

Response: Yes, Federal & State OSHA regulations requires all electrical Machinery to be approved by a Nationally Recognized Testing Laboratory (NRTL), and apply to your entire operation including the Machinery exempted by Senate Bill 490 and you could receive huge fines for unlisted equipment.

(11) If my Machinery or equipment is exempt by Senate Bill 490 may I do my own connection of the equipment to the electrical system?

Response: No, this work has to be performed by a licensed electrical contractor; however there are some exceptions to this law.

(12) Are permits required for the installation of the Machinery or equipment if I move them in after the CO is issued?

Response: Yes, a permit for the electrical connection or other connections to the building system requires permits no matter when the Machinery or equipment is installed.

(13) During the initial inspection, does the field inspector have the authority to classify a piece of Machinery as "Industrial" per the definitions contained in part 4?

Response: Yes, the field inspector has the authority to make a preliminary determination on a piece of Machinery as "Industrial Machinery" however; a final determination can't be made until the owner provides the declaration statement for the equipment.