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President and Chief Executive Officer

February 22, 2007

European Commission  
DG Enterprise and Industry (ENTR/H/6)  
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Dear Sir/Madam:

This is in response to your public consultation paper on putting off implementation of the Units of Measurement directive (80/181/EEC). NEMA agrees with your position regarding Article 3 of the Directive that the authority to use supplementary indications should be extended indefinitely.

A considerable amount of the approximately \$10 billion in existing annual two-way Trans-Atlantic electrical equipment trade is currently shipped with markings in both metric and non-metric units. As per European Council Directive 80/181, however, starting on January 1, 2010 only the metric system could be used for the labeling of products and components used within the European Union. In practice, this means that both American and European manufacturers would need to invest in dual product inventories for export. European industry groups such as UNICE and ORGALIME have also expressed their concerns on this matter.

As the attachments detail, American electrical equipment manufacturers are neither opposed to the metric system, nor opposed to permitting flexibility to use metric or dual-labeling where appropriate. However, for our sector it is not a question of whether the U.S. will "go metric", but of irreconcilable electro-technical differences between the built infrastructures in the U.S. and many European countries. Since dual-labeling ensures that electrical equipment can be safely selected and installed in each market, we feel that continuing to allow dual-labeling for electroindustry products would be the best solution.

**National Electrical  
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In this respect, our answers to the questions you pose are as follows:

- #7: “Yes”, the use of supplementary units should be permitted;
- #8: “No”, NEMA members do not find the current system problematic;
- And with regards to the others, our general response is that the inclusion of some specific indications and not others would lead to awkwardness in procedures, as well as an ongoing need to update 80/181/EEC.

NEMA is the trade association of choice for the North American electrical manufacturing industry, including the subsidiaries of many European-based corporations. Domestic production of electrical products sold worldwide exceeds \$120 billion. Founded in 1926 and headquartered near Washington, D.C., its 430 member companies manufacture products used in the generation, transmission and distribution, control, and use of electricity. These products are used in utility, medical, industrial, commercial, institutional, and residential applications. In addition to its headquarters in Rosslyn, Virginia, USA, NEMA also has offices in Beijing, Sao Paulo, and Mexico City.

Thank you for your consideration of these remarks. We are available to discuss this matter further with you at your convenience.

Respectfully,



Evan Gaddis

President and Chief Executive Officer

Attachments: As indicated

## Attachment A

### **Prohibition of Dual Labeling in the EU Metric Directive Will Hurt EU and Non-EU Electrical Equipment Manufacturers**

1. The issue at hand is not whether or not the U.S. should “go metric”. American electrical equipment manufacturers are neither opposed to the metric system nor against permitting flexibility to use the metric system or dual-labeling where appropriate in the United States. Indeed, dual-labeling in particular already appears on a large number of goods in the U.S., including electrical equipment.
2. This said, it must be stressed that the entire electrical infrastructure of the United States and some other countries has been built and designed in accordance with “English” technical units. The technical differences vis-à-vis electrical infrastructures elsewhere are fundamental, profound, and not just a question of differing units of height, weight, volume, etc.
3. Both U.S. installation codes and product standards are based on critical, non-metric units-of-measure for electrical products. Three key examples of these units are motor and controller ratings in Horsepower (HP), wire sizes provided in American Wire Gauge (AWG), and torque provided in lb-in. (See Attachment B.)
4. The range of electrical equipment is not among those products subject to either the U.S. federal Fair Packaging and Labeling Act or the measures approved by 46 U.S. states that permit metric-only labeling.
5. Therefore, when the European Union’s metric-only labeling directive comes into effect on January 1, 2010, both EU and non-EU manufacturers of electrical equipment will have to start making dual stocks of product – a costly and unnecessary change.
6. Moreover, the Directive will prohibit "dual marking of metric and English" on packages, products, catalogues, and drawings shipped to the EU. Dual marking has been successfully used for an extensive period of time without incident. It also has implications for web sites and inter-company communications.
7. The prohibition of supplemental markings is a barrier to effective trade for both EU and non-EU based manufacturers and results in significant cost increases for both EU and non-EU manufacturers
8. The production chain issues are complex. For instance, an electrical wholesaler in the US sells a component with AWG wire size to a machine manufacturer in the US. Should the finished machine then be shipped to the EU, the AWG marked component would be prohibited. This results in market confusion and significant increases in inventory at both the manufacturer and the wholesaler levels. In the vast majority of cases, the wholesaler will have no knowledge of where the final machine will be shipped. (See Attachment C.)

## **Attachment B**

### **Examples of How A Dual-Markings Prohibition Could Inhibit Trade and Threaten Electrical Safety**

As the following illustrate, fundamental infrastructural differences frequently make metric-only labeled electrical products unacceptable for the US market.

#### **Example 1 – Ratings for Motor Control Applications**

There are a variety of products used to control the power sent to electric motors. These products must be capable of handling the load associated with the motor and must be able to safely interrupt the currents associated with motor operation. In the US, both the motors and the control equipment are rated in horsepower (HP). This is a long-standing measure of electric motor size and capability. In the EU, motors are rated in kilowatts (kW). The ratings are not equivalent and cannot be directly interchanged. The National Electric Code (NEC - the most widely used electrical code in the US) requires that the ratings be in horsepower so that the products will function in the existing electrical infrastructure. A product rated only in kW will not be acceptable in the US and a product rated only in HP will not be acceptable in the EU. Attempting to use a kW-only rated product in the US on a HP-rated motor would raise numerous safety concerns because of the mismatch in ratings.

#### **Example 2 – Electrical Wire Sizes**

The standardized method in the US of selecting electrical wires and cables is through the American Wire Gauge (AWG) sizing system. This system establishes the standard for the size of the conductor and is critical because it determines the ampacity (current capability) of the wire as well as the physical dimensions that must be coordinated to be used in conduit and other wiring systems. European conductors are dimensioned using  $\text{mm}^2$  as the measurement. Although a conversion can be made between  $\text{mm}^2$  and AWG, the results end up being nonstandard sizes that do not have current ratings or physical dimensions that are taken into account in US wiring systems. As with example 1, the NEC requires that electrical wires be sized and marked using the AWG system. This is critical because US wiring methods, connectors and related products are all based on the AWG sizing. A conductor sized only in  $\text{mm}^2$  would not be acceptable in the US and one carrying only AWG will not be acceptable in the EU.

#### **Example 3 – Torque Ratings**

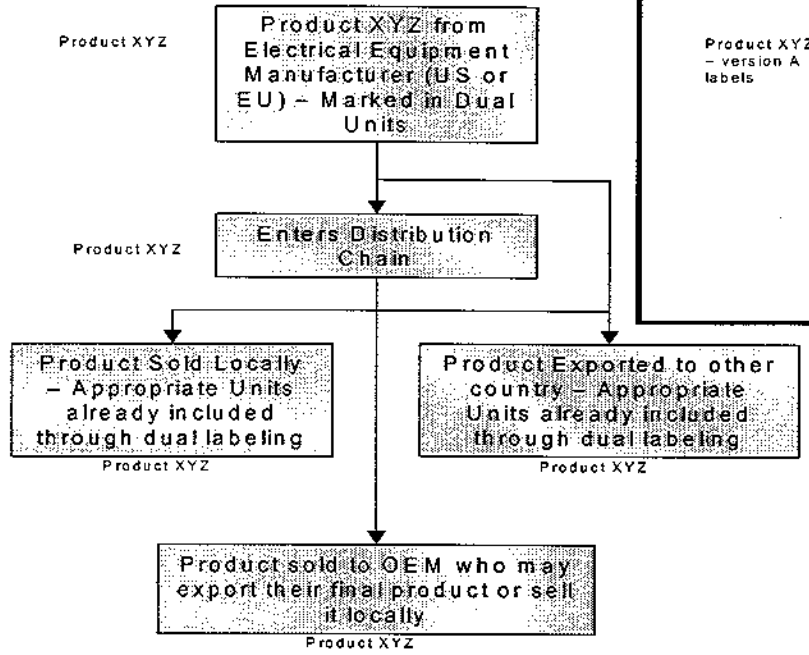
All mechanical connections between electrical conductors and equipment have a “torque” value assigned for their proper operation. This value establishes how “tight” the connection should be made in order for it to operate properly. Too much torque can result in damage to the connection and too little torque can result in a loose connection. In the US, this measurement value is in lb-in (pound-inches) while in the EU the value is NM (Newton-meters). These values are achieved by using calibrated tools that measure the correct value. US industry has huge numbers of lb-in based torque wrenches in use.

Products marked only in NM could result in the incorrect tool being used to establish the torque value and result in stressed or loose connections that can be a fire or shock hazard.

Dual markings resolve all three of these issues by providing the correct information for installers in the particular infrastructures where they are working.

**Attachment C**

**Dual Labeling Permitted**



**Dual Labeling Prohibited**

