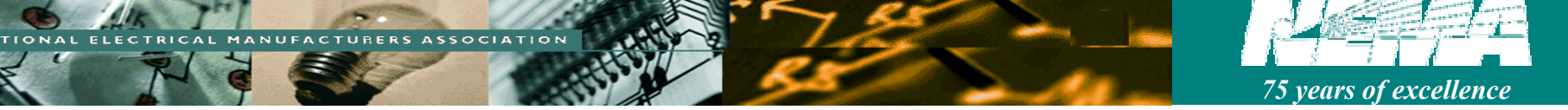
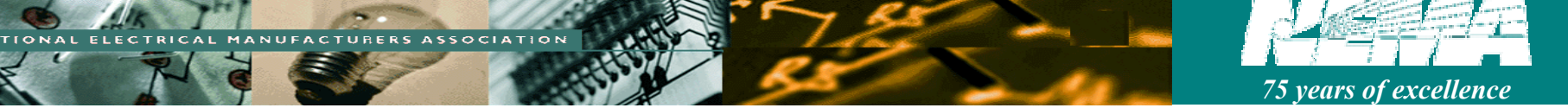


NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

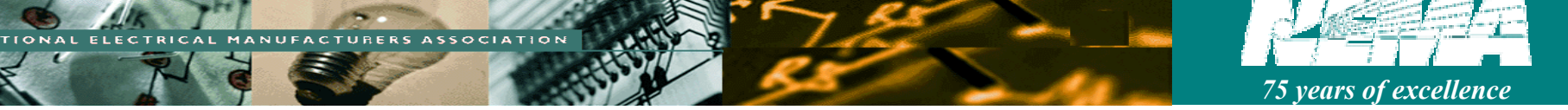
Brasil - US
Video Conference on Standards

Gene Eckhart
December 7, 2006



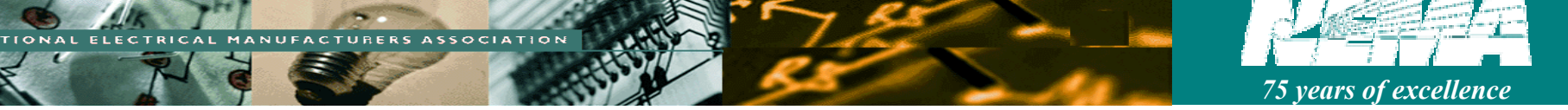
NEMA Vital Statistics

- 384 member companies
- 91 staff
- $18 million annual budget
- 54 product sections
- 8 industry divisions



Product Diversity

- Lighting
- Electric motors
- LV Surge Protection
- CT scanners
- Nurse call stations
- Dry cell batteries
- Fuses
- Industrial controls
- Switchgear
- Transformers
- Smoke detectors
- HV Insulators
- Building wire
- Capacitors
- Ultrasound imaging
- Traffic controls
- Welding equipment
- Circuit breakers



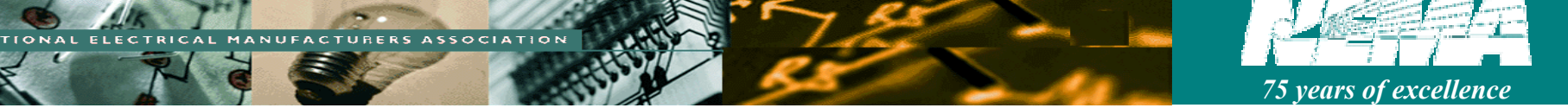
The Changing Role of NEMA:

National Perspective → Global Vision

NEMA standards	→	IEC standards
Domestic commerce	→	International trade policy
U.S. market information	→	Global market information
Domestic regulations	→	Global regulations
Domestic allies	→	Domestic & Int'l. allies

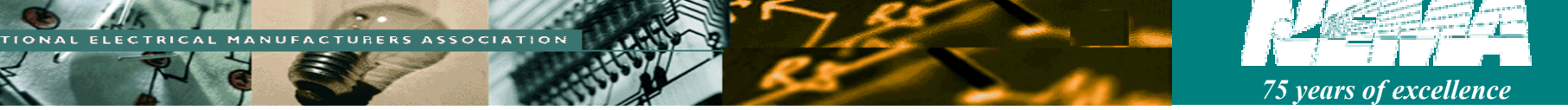
Global NEMA

- Brazil office in São Paulo
- China office in Beijing
- Mexico office in Mexico City
- 40% of NEMA revenue from foreign-owned members
- Frequent communications with counterpart industry groups such as ABILUX, ABINEE, COBEI, ABRASIP, etc.



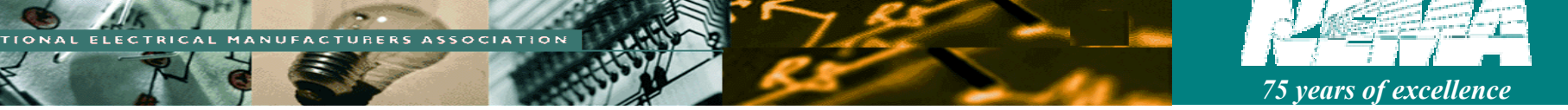
NEMA's Role as a Standards Developing Organization (SDO)

- 247 NEMA standards
- 52 are American National Standards (via ANSI)
- 24 NEMA sections participate in 72 CANENA standards harmonization projects
- 49 NEMA Sections participate in 59 IEC TCs/SCs
- 56 IEC and 7 ISO TAG Administrators for related Technical Committees and Subcommittees
- Over 300 representatives on Committees of other national organizations



NEMA International Standards Activities

- Provides for NEMA representation and participation on the U.S. National Committee for the IEC
- Serves on the U.S. delegations to the IEC Council and Standardization Management Board
- Holds the chairmanship of the IEC System for Conformity Testing to Standards for Electrical Equipment (IECEE) and the Secretariat of the US National Committee of the IECEE and IECEx
- Led the development of the IEC Global Relevance Policy
- Goal is to have IEC standards include all product types and variations.



Electrical Standards Used in the U.S.

- Industry performance standards - NEMA, IEEE, IEC [note: pure translation/adoption of IEC standards does not work; it is necessary to consider the infrastructure.]
- Safety standards - UL
- These may or may not be American National Standards
- In most cities and towns, products must be listed by a third-party testing and certification organization.

U. S. Electric Industry Trendlines

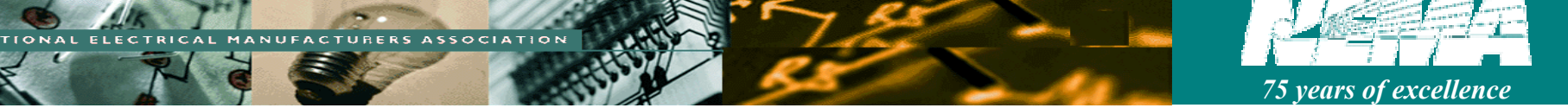
- 1900 – 1970: Almost 100% of product was manufactured in the U.S. and sold in the U.S.
- 1970 – 1995: Consolidation of local manufacturers into regional and national firms; beginning of global consolidation (HQ and plants in different countries)
- 1995 – 2006: NAFTA implementation led to North American harmonization via CANENA
- 2000 – present: Broad globalization; manufacturing in one or more countries for sales in multiple locations.

Current NEMA Members' Outlooks

- Driven by safety, performance (including efficiency), reliability, and environmental considerations.
- Manufacture a single global product, test once, certify for use in multiple countries as necessary.

or

- Manufacture a local product for sales in a single country or region.
- Brasil has historically been very well organized and flexible under NBR 5410 (Low Voltage Code) and its associated product standards.
- Trend in Brasil and MERCOSUR is to exclude products.



www.nema.org

Hilton Moreno
hiltonmoreno@uol.com.br

Gene Eckhart
gen_eckhart@nema.org