

The view from the 17th floor

As plans for each issue of *electroindustry* begin, I find myself excited by the opportunity to speak at length about NEMA's continuous efforts and new developments. Every day, I find NEMA further expanding its reach, pursuing the three strategic initiatives, and simultaneously providing its members with a wealth of information, options, and guidelines to assist in their business decisions.

One particularly exciting project is our work toward defining the "smart grid." NEMA is continuing to invest both time and effort into establishing the smart grid's distinct characteristics, and we're also calling on scientists to aid in writing standards and instituting parameters to integrate into what will likely be a five-level definition. Once this is completed, manufacturers will have the information needed to begin producing usable product that aligns with smart-grid standards.

NEMA is also enlisting the aid of scientists from nine member companies to evaluate embedded technology—including such emerging devices as holograms and radio-frequency identification (RFID) sensors—that could help to combat counterfeiting.

Our anti-counterfeiting objective has global reach, and the efforts of our international offices are critical to that and other endeavors. I am pleased by the

achievements that are being made toward our objective of providing international market access and providing a level playing field for our members all over the world. All three international NEMA offices are staffed by highly qualified personnel whose mission is to increase NEMA's value to our members by offering assistance and providing information and market access.

NEMA's advocacy efforts are resulting in tremendous successes. In this issue, you will read more about our Call to Action program, and about how you can help to ensure that favorable trade legislation continues to move through the legislature.

As our members' voice on Capitol Hill, NEMA is having phenomenal success in seeing to it that your interests are served in legislation affecting the industry. NEMA has successfully inserted numerous pro-industry provisions in House and Senate bills this year, including tax provisions in both houses and



the sweeping energy bills. NEMA's medical division, the Medical Imaging and Technology Alliance, is working to ensure manufacturers' interests in no fewer than six House and Senate bills.

All of this speaks volumes to me about NEMA's member companies and staff. It is truly rewarding to be part of NEMA during these exciting times. **ei**



Evan Gaddis

FROM THE PRESIDENT

Your action needed on trade bills!

NEMA President and Chief Executive Officer Evan Gaddis recently wrote to every member of Congress asking each to ratify pending free-trade agreements with South Korea, Colombia, Panama, and Peru as soon as possible. Because passage could be difficult, NEMA encourages member companies and their employees to also get involved in the effort. Through our Web site, you too can send the message to legislators that barrier-free access to foreign markets is crucial for our industry. Go to www.nema.org/gov/take-action/ to access this tool and make your voice heard. **ei**

John Meakem, 703.841.3243, joh_meakem@nema.org
Craig Updyke, 703.841.3294, cra_updyke@nema.org

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NEW TK

Louis Santamaria explains his new role as standards attaché to the European Union.



NEMA meets with new U.S. standards attaché

The U.S. industry has a new liaison in Europe, and NEMA has lost no time in getting acquainted with the powerful addition to the Administration.

Louis Santamaria has been assigned as the standards attaché to the U.S. Mission to the European Union, effective in August.



Louis Santamaria

In an interview with members of NEMA headquarters staff, Santamaria explained key elements of his new role, as well as his intention to establish guidelines

on standards and conformity assessment in Europe in response to global compliance demands. He offered insights into how his new duties will address NEMA's pressing global issues and those facing other U.S. industry sectors in the European market.

Q: Where do you see the European industry going in regards to regulation?

A: Virtually all industries—American and European—voice concern about conformity assessment for manufactured goods, although the disparity between the European industry and other global manufacturers is much greater. I intend to focus primarily on providing U.S. industry with early warnings of policy changes in Europe. Many times, when standards are established in Europe, there is hardly enough time to obtain opinions or review from other industries.

Q: Does the United States have standing to influence the outcome of European decisions on standards and regulation?

A: Although I believe that there is some opportunity for influence, it is limited, and depends heavily on time, personnel, and approach. European offices of companies having a global reach tend to differ greatly in opinion from those of the United States, and from other manufacturers throughout the world.

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11th Annual Meeting of the IECEx Scheme in Denver

The U.S. National Committee of the IECEx (USNC/IECEX) will be hosting the Annual Meeting of the International Electrotechnical Commission Scheme for Certification to Standards relating to equipment for use in explosive atmospheres. The IECEx Scheme is a global framework for the independent assessment and certification of equipment and services associated with explosive atmospheres, such as oil refineries, hospital operating theatres, aircraft refueling, and underground coal mines. The meetings will take place in the Denver Marriott City Center, Sept. 24–28. Meeting sponsors include FM Approvals, Underwriters Laboratories (UL), Intertek Testing Services (ITS), Joy Mining

Machinery, Baldor-Dodge—Reliance, Siemens Energy & Automation, Inc., and Vantage Technology LLC.

There are 26 national member countries participating in the IECEx Scheme. The week-long set of meetings provide for the facilitation of international trade in equipment and services for use in potentially explosive atmospheres while ensuring that a required level of safety is maintained. The meetings will bring together more than 200 foreign dignitaries, some of whom are major U.S. trading partners.

On Sept. 26, USNC/IECEX, in association with IECEx, will present a day-long industry symposium. The symposium should be attended by those dealing

with Ex-product design, conformity assessment, sales, or marketing. There will be breaks between sessions to facilitate networking opportunities with speakers and representatives from foreign conformity assessment organizations. Lunch will be provided by UL.

The symposium will be hosted by USNC/IECEX Chairman Kerry McManama. The program will feature opening remarks by IECx Chairman Uwe Klausmeyer. Paul Kelly, UL's lead operations manager, will discuss the IECEx and how the scheme can assist entry to foreign markets by U.S.-based manufacturers. Providing a historical perspective of the IECEx Scheme and the principles of IECEx certification will be IECx

Secretary Chris Agius. Liu WeiJun, CNCA China's chief engineer, will outline China's Ex-conformity assessment scheme. Ron Sinclair, Bas-eefa's managing director, will outline Ex-requirements for Europe and the ATEX directive. David Chirdon, MSHA's supervisory electrical engineer, will provide a regulatory perspective on Ex-requirements in the United States. There will also be a presentation about U.S. Ex-requirements, providing an industry and end-user perspective.

Paid registration is required to attend this event. Seating is limited, so early registration is advised.

For more information, contact Joel Solis at Joel_Solis@NEMA.org or visit www.iecex.com.



NFPA honors NEMA Field Representative John Minick

The National Fire Protection Association (NFPA) honored several of its members, including NEMA Field Representative John Minick, at the World Safety Conference and Exposition in Boston, Mass. in early June. In addition to Minick, James Naughton, Donald Cook, Andre Cartel, James Dollard, and Richard Owen received committee service awards. The awards are given for continuous voluntary service as a technical committee member over a substantial period of time, in recognition and appreciation of distinguished service to NFPA in the development of NFPA codes and standards. John served as chairman for Code-Making Panel I for nine years and as the principal member on the panel representing NEMA for a total of 11 years.

CANENA THC 99 makes progress on five standards

CANENA THC 99 met at the Canadian Standards Association's (CSA) headquarters in Mississauga, Ontario, July 25–26, 2007 and made significant progress on five harmonization projects.

As part of the maintenance cycle for wire connector and splicing wire connector standards, THC 99 addressed all proposals and comments received, as well as all deferred proposals retained from the first edition of the standards in the Amendments Logs. Both of these trinational standards were previously published, and are currently in their first revision cycle. The next steps will be to revise the standards accordingly and to distribute them for pre-ballot review by

the three standards development organizations.

THC 99 also addressed comments resulting from the ballot of the draft grounding and bonding equipment standard. The publications coordinator will revise the standard accordingly and submit it for publication as a binational standard.

THC 99 also addressed comments resulting from the pre-ballot review of the quick connect standard. The next step will be for the publications coordinator to revise the standard based on the THC's resolution of the comments, and for Underwriters Laboratories (UL) and CSA to ballot the approval of the binational standard.

Comments from the pre-ballot review of the luminaire disconnect standard were also addressed. The next step will be for the publications coordinator to revise the standard and for UL and CSA to ballot the approval of the binational (United States and Canada) standard.

Finally, THC 99 updated its harmonization plan based on the results of the meeting, and decided to establish a subcommittee to continue the harmonization work on connector standards for the electric utility industry.

Vince Baclawski, 703.841.3236
Vin_baclawski@nema.org

USNC issues policy statement on CANENA

In an important recent decision, the U.S. National Committee of IEC (USNC) issued a policy statement (USNC/Council 277) on July 10 that "acknowledges and supports the cooperation agreement between the Council for Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA) and IEC."

That agreement, which has been in place since September 2000 and was updated this year, establishes transparency between the two bodies and confirms that direct technical interactions will be carried out through official channels established by IEC national committees.

In the policy statement, the USNC Council acknowledged its support for the overall objectives of CANENA and stated its belief that the best method for ensuring the success of the IEC-CANENA agreement is to facilitate strong and effective cooperation between the CANENA technical harmonization committees (THCs) and the related USNC technical advisory groups (TAGs). Furthermore, the policy statement

confirmed the appointment of two "officially designated USNC liaison representatives to CANENA." In fact, this liaison has been in place since 2005 and has been instrumental in establishing improved understanding within the USNC Council of CANENA's objectives, especially where IEC standards are included in the scope of a CANENA work program.

CANENA was established in 1992 as an industry-driven, voluntary forum to facilitate the elimination of technical differences in electrical standards. Membership in CANENA is individual and not by country. Many NEMA product sections have invested in CANENA as a preferred forum for conducting priority technical standards in the Western Hemisphere activities where standards harmonization is considered necessary or essential. The resulting harmonized standards, now approaching 60 in number, provide increased market access in the region. They can also be maintained as singular harmonized standards instead of separate individual national standards

for the same scope of products. In addition, these harmonized standards are being increasingly considered for adoption by nations in the region having commonly installed electrical infrastructures.

In recent years, an increasing number of CANENA harmonization work programs are including IEC standards within their scopes. The proven CANENA process is adept at accommodating these broader scopes, and the participating national standards-development organizations (SDOs) have developed coordinated procedures to facilitate the adoption of the harmonized results.

CANENA maintains an executive committee, similar to a board of directors, which generally is comprised of at least two elected officers from each country that has participating members, as well as a president, treasurer, and secretary general. Current U.S. Vice President Chip Pudims of Bryant Electric, a subsidiary of Hubbell Inc., acknowledged the importance and the value of the USNC/IEC recognition of

CANENA in the following statement, "This update of the USNC/CANENA relationship, which acknowledges and supports the Cooperation Agreement between CANENA and IEC, has many advantages. The obvious [advantage] is to fortify industry in our mission to open international markets via participation and inclusion in the IEC standards scheme, to be able to provide one standard for similar electrical products throughout the world, for CANENA to reinforce its credibility in the Americas, where opportunities continue to evolve, and, of course, to the USNC, which can look to other national committees in the Americas for critical alliances in efforts to achieve a balanced regional influence in the IEC."

The latest 2007 amendment of CANENA's agreement with IEC calls for CANENA to encourage U.S. members to join and actively participate in the relevant technical advisory groups of the USNC.

The cooperation agreement between CANENA and IEC can be viewed at www.CANENA.org.



EIC/EME Expo promises information and networking

The planning and preparation for the 2007 Electrical Insulation Conference/Electrical Manufacturing Expo (EIC/EME) is now complete, and its attendees can look forward to the wide variety of technical presentations and exhibits that await them at the Gaylord Opryland Convention Center in Nashville, Tenn., Oct. 22-24. This non-profit event is organized by NEMA's Insulating Materials/Magnet Wire Division, the Dielectric Electrical Insulation Society of IEEE, and the Electrical Manufacturing & Coil Winding Association.

This event is organized and run by a diverse group of industry volunteers, and offers a technical conference and an exhibition specifically for engineers and purchasers of a wide variety of materials used to manufacture such electrical devices as motors, transformers, generators, and coil-winding insulation and equipment. Attendees will get up-to-date information about the latest market trends, meet electrical insulation and electrical manufacturing industry experts, network with both established members of the industry and newcomers to the field.

Included in the 2007 EIC/EME expo will be four segments designed to educate individuals and enhance company growth: technical presentation, short courses, exhibitions, and the Golden Omega Award banquet. In addition, blocks of time have been reserved to allow attendees to visit the exhibition floor.

Technical Presentations

The technical presentations will be organized into specific topic sessions, enabling participants to either attend all of the presentations in a particular topic or enjoy a variety of topics. The sessions are:

The Plenary Session—*Overview of Nanodielectrics: Insulating Materials of the Future*—will cover:

- Generator diagnostics and performance
- Power transformers
- Transformer materials and design
- Aircraft wiring characterization and validation
- Techniques for predictive maintenance
- Hybrid vehicle technology
- Design and application of power supplies

The Special Session—*Understanding Induction Motor Performance*—will cover:

- Motor/generator materials and diagnostics
- Motor design and analysis
- Insulating materials—outdoor insulation
- Transformer materials and diagnostics
- Fundamentals and advanced technologies of bobbin design
- Design and developments of highly reliable transformers

The Special Session—*Global Issues and Supply Chain Management*—will cover:

- Generator diagnostics and performance

- Power transformers
- Transformer materials and design
- Selecting the appropriate electrical steel
- Fuel cell application
- Six Sigma
- Applications for high-performance polymers
- Outdoor insulation performance

Short Courses

Short courses are scheduled during the conference. Some of the topics that will be covered include:

- Lean—A business process
- Practical power magnetics design techniques
- Polymer chemistry for engineers
- Introduction to electrical insulation for non-engineers
- Introduction to insulating resins and varnishes

Exhibitions

The Expo will be held at the same venue, and will consist of more than 150 companies exhibiting solutions to a wide variety of electrical insulation, manufacturing, and coil-winding issues. Representatives from exhibiting companies will be available for consult.

Golden Omega Award Banquet

The Golden Omega Award is presented to an outstanding individual in science, engineering, education, or industry who has made significant contributions to technological advancement. The 2007 Golden Omega Awardee is

Lloyd G. Trotter, vice chairman of General Electric and president and chief executive officer of GE Industrial, a \$33 billion business with more than 90,000 employees.

Trotter is a founding member of GE's African American Forum, and is actively involved in professional and community organizations. He represents GE for America's Promise, whose goal is to increase volunteerism in support of youth. He has served on the boards of NEMA, the National Association of Manufacturers, National Action Council for Minorities in Engineering, and the GE Foundation. He is regularly recognized for his ongoing commitment to volunteerism and mentoring.

The EIC Hall of Fame Award is given to an individual who has given of his or her time and expertise to better the Electrical Insulation Conference. This year's award winner is Harry Orton, who has been active in the EIC since the late 80s when he became responsible for the EIC Short Course program. He has served on the EIC Board of Governors, and was recently appointed chair of the IEEE DEIS meetings committee. Orton has been active in the industry since 1966 when he joined BC Hydro. He now consults and specializes in underground power cables.

For further information, call 619-435-3629 or visit the Conference and Expo Web site at www.eic-emexpo.org.

Don't get burned by arc flash!

What is hotter than the surface of the sun, explodes with the energy of dynamite, and kills one to two workers a day, each year? An arc flash.

An arc flash is the sudden release of electrical energy through the air when a high-voltage gap exists and there is a breakdown between conductors.

An arc flash happens without warning and too fast for you to react. The heat will reach as high as 35,000 degrees Fahrenheit—about four times as hot as the surface of the sun. High-voltage arcs can also produce considerable pressure waves by rapidly heating the air and creating a blast. This pressure burst can hit a worker with great force, and send molten metal droplets from melted copper and aluminum electrical components great distances at extremely high velocities that can result in critical burns, blindness, loss of hearing, and even death.

Surprisingly, it has just been in recent years that the term “arc flash” has garnered much attention, and that companies have started to raise awareness about the problem. However, many companies do not think arc flash is a concern to them, because they have never had an incident. Awareness



ness about this deadly effect is critical, and will help prevent even more injuries and deaths.

What causes an arc flash?

An arc flash can be spontaneous or result from inadvertently bridging electrical contacts with a conducting object. Other causes may include dropped tools or the buildup of conductive dust or corrosion.

Conditions under which an arc flash can occur:

- Working on an energized circuit
- Electrical equipment failure

How large is the problem?

According to CapSchell, Inc., a Chicago-based research and consulting firm that specializes in workplace injury prevention, there are five to 10 arc flash explosions every day in the United States.

The final cost to employers and their insurers for a single, serious injury can approach \$10 million (CapSchell).

2,000 workers are admitted annually to burn centers for extended injury treatments caused by arc flash, according to the U.S. Department of Labor.

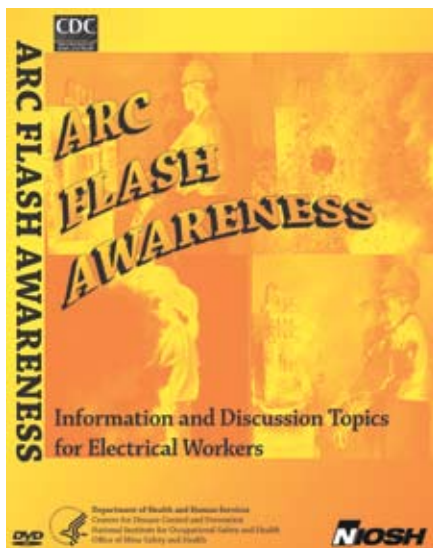
A recent study from the National Institute for Occupational Safety and Health (NIOSH) determined that during the period from 1992 through 2001, there were 44,363 electricity-related injuries involving days away from work.

The number of non-fatal electrical shock injuries was 27,262, while 17,101 injuries were caused by electric arc-flash burns.

With statistics like these, companies cannot afford to ignore electrical safety issues surrounding accidental electrocution from arc flash explosions, especially when an arc flash incident could account for more than \$15 million in direct and indirect costs.

To address this issue, the Electrical Safety Foundation International (ESFI) has teamed with NIOSH and the Centers for Disease Control to distribute an arc flash awareness DVD available in English and Spanish. The DVD includes basic information about arc flash awareness and tells the stories of several electrical workers who were injured by an arc flash.

These tasks and many other electrical safety awareness programs are available through ESFI, which is committed to make the public more knowledgeable about hazards relating to electrical dangers on the job. [Ei](#)



Private labeling: The 5-ton elephant in the room

By David Gordon and Allen Ray, *Allen Ray Associates, NEMA associate member*

As interest in private labeling heats up, the question arises, "Is private labeling an offensive, defensive, or opportunistic strategy for a manufacturer?" Discussions with more than 20 manufacturers indicate that for some, the answer is, "It depends," and for many others, "I just don't know."

Many name-brand manufacturers may reject the idea of private labeling, but also fear that their electrical distributors will seek private-label high-volume stock-keeping units (SKUs), which reduce manufacturers' sales and profits. Manufacturers we spoke with feel that the sole reason distributors are interested in private labeling is to gain a price/margin advantage.

Private labeling in electrical distribution isn't new. A few national chains and some regional distributors have private-labeled select SKUs for years. These efforts were targeted at specific price-sensitive customer groups, and the scope of the effort did not represent a significant threat to manufacturers.

Many electrical manufacturers believe distributor apathy for manufacturer brands in selected product categories may be driven by three factors: a reduction in manufacturer brand investment, minimal new product development, and the pursuit of lower manufacturing costs. But they feel that the emergence of private labeling is an outgrowth of distributors' focus on selling price and their services, rather than on supporting manufacturer brands, products, and service differentiations.

The manufacturers with whom we spoke said that distributors private-label for the following reasons:

- The increased economies of scale, resources, and market control that come with consolidation
- The desire to increase margins on products viewed as commodities
- The desire to build their brand, rather than support a manufacturer's brand
- The opportunity to increase sales and market share using a price-driven



strategy for price-sensitive products. A number of brand-oriented manufacturers felt that distributors do not understand the array of services they offer or the functions they perform. Others feel that the move to private labeling, while having significant risks for distributors, is no different from the off-shore/import brand competition that manufacturers face in the marketplace.

Why manufacturers private-label

Some manufacturers are private labeling because they may want to improve operating margins by increasing plant utilization. According to Rick Sievert, president of The Sievert Group based in Schaumburg, Illinois, studies have found that it is more difficult to generate profits when plant utilization is below 80 percent. Other companies recognize that their products—and companies—are a commodity.

One manufacturer said, "Manufacturers have allowed brand equity to diminish." An executive of a marketing group said, "I would say that only 10 to 15 percent of our manufacturers, and maybe 20 percent of industry manufacturers, are good marketers."

Other reasons are:

- The manufacturer is unable to dif-

ferentiate the product line to justify a price premium

- The manufacturer is willing to cannibalize its current business to retain some of the customer's business, rather than potentially lose all of it
- The company seeks to increase distributor account penetration in the belief that the more volume it has with the distributor, the more important the manufacturer will be
- The company is a small manufacturer and is willing to dedicate itself to becoming a private-label manufacturer
- The manufacturer is the low-cost producer in its category and is known as a product follower

However, many manufacturers question why a name-brand manufacturer would consider a dual (brand and private-labeling) approach. According to research conducted by Nirmalya Kumar and Jan-Benedict Steenkamp in *The Private Label Strategy*, a dual approach works only if total costs are less than competitor variable costs and if the strategy provides a company with a significant cost advantage. In this scenario, the private-labeling strategy and the associated production run is a short-term strategy, and the manufacturer separates its brand and private-label businesses.

The authors say that a dual strategy detracts from the brand strategy because it distracts management, misallocates costs, and inevitably does not result in a better relationship with the distributor. Rather than compete for low-operating margin business that manufacturers are typically ill-prepared to support, manufacturers ranked first and second in their categories should focus on their brands and compete based on innovation, marketing, and operational efficiencies. Frequently, a dual strategy is attempted by weaker brands or when a top-tier brand questions its value. Conversely, for small to medium-sized manufacturers, price leaders, and low-cost manu-

facturers, becoming a dedicated private-label manufacturer and "copy-catting" products can be an effective business strategy. These manufacturers typically do not offer distributors comprehensive marketing, product development, and sales and service support that full-service manufacturers provide.

The role of the rep

Complementary to the decision to become a private-label manufacturer is the role of a manufacturer's sales organization, especially if it goes to market with independent representatives. Research by Allen Ray and Associates shows that some brand manufacturers that are private-labeling or are considering it are doing so to compensate their reps for this business. The additional cost is either allocated to the price or absorbed by the manufacturer.

While there is no evidence to date that reps have diverted business from a distributor offering private-label products to distributors supporting brands, some respondents said that reps will support the lines—and distributors—who have the highest profitability for them as well as those who are most loyal to them. The drive to private-label reinforces the need for reps to generate customer product and brand preference for the manufacturer. Depending upon a distributor's avowed strategy, reps, regardless of the direction of their manufacturers, want to work with distributors who support them.

Reps work on a concept of "lifetime revenue." They spend time with end-users to create demand that they expect will generate a future revenue stream based upon those customers continuing to purchase the brand. Manufacturers and distributors that private-label may need to consider an alternative rep compensation model, just as reps with these lines may need to consider alternative business models.

Manufacturer response to private-labeling


According to the Private Label Manufacturer's Association in New York, 20 percent of items sold in U.S. supermarkets, drug chains, and mass merchandisers are store brands. Although the electrical industry has different needs, it is not

unreasonable to project that 15 percent to 25 percent of electrical materials, excluding wire, cable, and conduit, could become private-labeled products due to brand insensitivity. The challenge is the channel's ability to support store brands and manufacturers' willingness to encourage this effort.

To support private labeling, manufacturers need good information from their distributors (who typically are not good demand forecasters). Several manufacturers said that if private labeling grew significantly, they may need to revise distribution policies and choose partners differently. One manufacturer said, "If many distributors private-labeled products, manufacturers would need to develop consortiums to sell directly, utilizing the Web, regional warehouses, and logistics firms. Manufacturers would secure agreements with large customers and appropriate end-users, and could develop 'replenishment' agreements with end-users."

The difference is in the brand

Interest in private labeling is a battle for customer visibility. Some industry observers believe that customers are interested only in price, and must therefore compete on that basis. Others see value in brands and product innovation and the support that brand manufacturers bring.

For many years, some product categories have been brand-agnostic. These manufacturers competed based upon distributor-focused services, relationships, and price. Many of them are susceptible to private labeling and/or imported, lower-cost products, as distributors may see limited value in these manufacturers. Just as a distributor's decision to private-label should be based upon a long-term strategy, manufacturers should consider the decision to private-label for a distributor (as some manufacturers are doing now) as a component of a broader initiative. The decision to private-label also may influence a company's willingness to invest in product development and its brand, because the operating margins generated from private labeling are significantly lower than those from branded products. 

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REACH for info at NEMA workshop


Does your company do business in Europe? Do your customers do business there? If the answer to either question is affirmative, you need to know about new European regulations on chemicals and chemical users and how they can affect your business.

NEMA is offering its member companies an opportunity to get answers about the registration, evaluation, authorization, and restriction of chemicals (REACH), regulations at a workshop on October 18 at the Hyatt Arlington, one block from NEMA headquarters in Rosslyn, Va. The workshop is being organized as part of the NEMA Board of Governors' strategic initiative on environmentally conscious design.

REACH is not just an environmental compliance matter, but also a significant business issue on the horizon—it not only represents a shift in the burden for chemical safety but also, due to its goal of restricting and eliminating the use of toxic materials wherever possible, has the potential to affect all manufacturers. REACH also goes beyond chemicals to regulate manufactured goods that may release a substance during use.

The workshop will feature experts on many aspects of REACH and of the evolution of chemical regulations as they affect the electroindustry now and into the future. It will provide resources and tools to begin or further a company's REACH-compliance activities. Planning for and achieving compliance with REACH is vital to maintaining access to the European market; the first REACH deadlines are in 2008.

Because supply-chain communication is one of the key aspects of REACH, member companies of the Association of Home Appliance Manufacturers are also invited to attend the workshop.

For more information on the workshop, go to www.nema.org/events or contact Craig Updyke at 703.841.3293 or cra_updyke@nema.org. 

Imaging is everything

Advances in medical imaging have revolutionized patient care. Why are the financial resources that help support it drying up?

William DeVries, the cardiothoracic surgeon who performed the first successful permanent artificial heart transplant in 1982, has been around medicine all his life. The association, in fact, may have started a little too early for the celebrated doctor's own tastes. Now 63, DeVries still remembers a day in his early childhood in Utah when he was injured and taken to the hospital in an ambulance. But the vehicle that came for him that day was not an ambulance at all: it was a hearse.

"That was the way things were back then," DeVries says. "I can still remember the gold lettering on the back of that thing. It was Webb Mortuary. That's how things have changed just in my lifetime."

The same could be said for the past 25 years. When DeVries implanted the Jarvik-7 artificial heart into retired dentist Barney Clark, the device utilized an external power source roughly the size of a suitcase. Today, similar power sources can be implanted in the patient and are vastly more efficient.

Many of these advancements would not have been possible without medical imaging, the broad, data-centric discipline that captures and displays visual

information and allows doctors to reveal, diagnose, and examine diseases inside a patient's body without invasive exploratory surgery. Medical procedures, such as fluoroscopies, magnetic resonance imaging (MRI), and positron emission tomography (PET), all common today, would not be possible without the steady leaps in medical imaging in the past few decades.

"Nothing has transformed health care like medical imaging," DeVries says. "It has changed everything that we do. Imaging gives us the tools to allow patients to get on with their lives. The heightened understanding and treatment that imaging has afforded us is indispensable."

On the front lines

DeVries' comments came on the heels of a report released late last year for NEMA. The report, *Changing the Landscape: How Medical Imaging has Transformed Health Care in the U.S.*, said that medical imaging, once considered mainly a diagnostic tool, is now used on the front lines of medicine. According to the report, it has become a standard of

Find out more at these medical imaging Web sites

For additional information on medical imaging, check out these Web sites:

www.medicalimaging.org—a clearinghouse of information on the latest in medical imaging and related policy issues

www.medicalimaging.com—a diagnostic imaging portal with sections on a variety of related topics

www.medicalimagingnews.com—news and updates on medical imaging

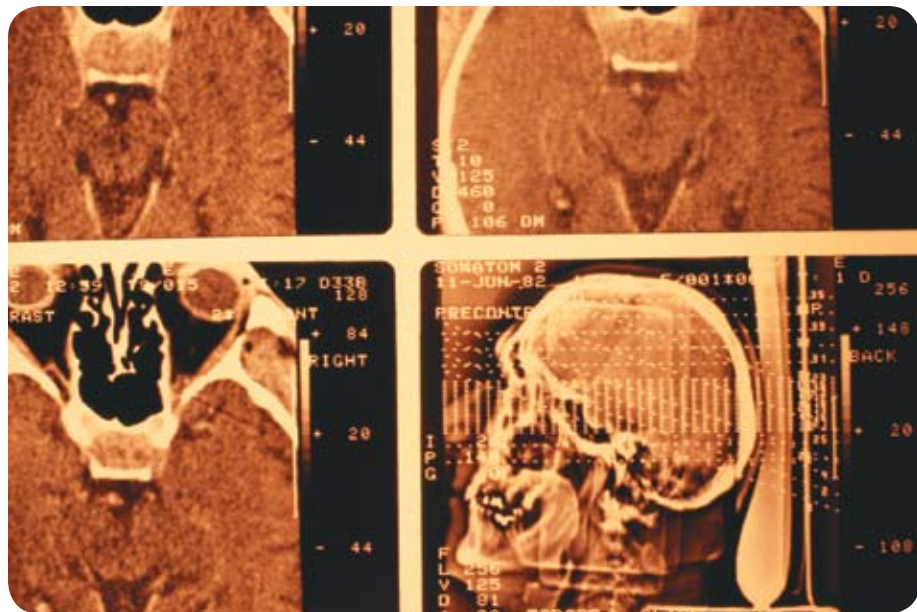
www.imaging-centers.com—a searchable directory of medical imaging centers across the United States

www.radiologyarticles.com—daily news and information on radiology and medical imaging

modern medical care for cancer, stroke, heart disease, trauma, and neurological treatments, and innovations in the field have made treatment faster, more precise, and less invasive.

"The power of imaging to offer more precise and less invasive care has sparked what can only be described as a fundamental transformation in medicine," says Donald Rucker, chief medical officer of Siemens Medical Solutions USA. "Physicians can now use imaging for more conditions, for more patients, and for a much broader array of purposes than ever before."

Yet the ground-breaking strides in medical imaging—along with higher utilization by physicians—have not been immune to intense budgetary pressures in Washington. As part of a series of policy moves, Medicare reimbursements for medical imaging were slashed 25



percent in 2006. And the Centers for Medicare and Medicaid Services (CMS), which originally proposed cutting reimbursements for imaging by 50 percent in 2007, has advocated a similar 25-percent reduction for 2007. According to a study by the Washington, D.C.-based Access to Medical Imaging Coalition (AMIC), nearly 90 percent of medical imaging procedures at physician offices and independent imaging centers that are reimbursable by Medicare would receive lower payments.

"The cuts were hastily crafted and it is hard to believe that Congress or CMS anticipated cuts this severe," says AMIC Executive Director Tim Trysla. "The cuts overshoot the target and directly hit procedures that Medicare patients use all the time—for heart disease, back pain, tumors, and artery problems."

Andrew Whitman, vice president of the Medical Imaging and Technology Alliance (MITA), a division of NEMA, said that the deep cuts came about as a result of "a misconception" by some on Capitol Hill that medical imaging is being performed indiscriminately. "We'll continue to work with the new Congress to turn this back, because we feel this will directly affect patient care in a very negative way," he said.

When is it appropriate?

Envisioning a medical profession with unreasonable financial restraints governing the use of imaging understandably gives top physicians reasons to pause.

"Medical imaging is, quite simply, good medical practice; it's central to the modern medical process," says Allen Taylor, chief of cardiology service and director of cardiovascular research at Walter Reed Army Medical Center. "It's as if someone were to go into your garage and take your car away. You wouldn't know how to get to work."

Taylor favors an approach in which doctors—not lawmakers—determine when it is appropriate to use medical imaging.

"The truth of the matter is that you have to spend money to make money," he says. "Imaging helps people recover faster and get back to work faster. That has to be calculated into the equation. And instead of legislating medical imaging away, let's let the medical commu-

nity study this and figure out what is appropriate and what is not."

"Medical imaging has become central to what we do. But we have to be rigorous about using these tests only when they're appropriate." He adds that less financial support for imaging eventually will have an ominous ripple effect on researchers in the field, device manufacturers, and, ultimately, patients.


"These cuts will reduce the [research] investment in imaging, so you're not going to get the more cutting-edge equipment in physicians' offices," Taylor says. "We will be forced to practice medicine with the tools we have. So, a patient who needs a CAT scan will get an invasive scan and miss three days of work, instead of having a non-invasive procedure and return to work the next day. I'll guarantee it will happen."

Conversely, a financially unfettered future for medical imaging holds almost limitless potential. Developments in molecular, cellular, functional, and genetic imaging—particularly in light of

the successful mapping of the human genome—promise a new era of prediction and disease prevention."

Researchers such as Richard Robb, director of the Biomedical Imaging Resource at the Mayo Clinic College of Medicine, are working on highly sophisticated, multi-dimensional imaging tools that will give physicians an unprecedented view of what goes on inside the human body. Robb's computer-generated models offer medical teams the opportunity to do virtual "flyovers" through the internal anatomy and view vital organs, such as the heart, in motion.

"These models meld function and anatomy in an unprecedented way," Robb says. "The fusion of these technologies allows you to really see the inner workings in space and time and create real-time images to study the electrophysiology. With this type of imaging, you will be able to perform diagnosis and treatment at the same time."

"It sounds like a little bit of science fiction. But it's not." 

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ei international roundup

NEMA Brasil trade show a hit with U.S. NEMA members

NEMA Brasil participated in the 12th Eletron Trade Show of the Electric, Electronic, and Industrial Automation August 1-4 at Expo Trade Pavilion in Curitiba, in the state of Paraná.

Four NEMA member companies shared NEMA's booth: 3M (Brazil), Acuity (United States), Cooper Bussmann (Brazil), and Thomas & Betts (United States). More than 100 Brazilian and transnational manufacturers and distributors showcased their products, including many NEMA members. More than 20,000 visitors from all regions of Brazil, and from several other countries, attended Eletron 2007; the Mercosur booths attracted particular attention.

According to Luis Fernando Rezende, director of Luminárias Projeto, a distributor in Brazil of NEMA-member Acuity Brands Lighting, "Participation in NEMA's booth met our expectations and permitted us to showcase, at a low cost and in

convenient way, new products, and have direct contact with customers, professionals, and representatives in the state of Paraná."

"It was very important that we partnered in this trade show with a trade association that is a leader on standards development, and that represents the legitimate interests of the industry and consumers. NEMA members are recognized as promoting safety in the design, manufacturing, and use of electrical products," said João Manoel C. Ferreira, 3M sales representative to Brazil in Curitiba City.

The Technical Congress Eletricon 2007 was held simultaneously with the Eletron Trade Show. Organized, coordinated, and chaired for the third consecutive time by NEMA Brasil President Hilton Moreno, the congress was a great success. The meeting was divided into three panels: Building and commercial automation and structured cabling, Industrial Automation, and The present and future of the alternative, renewable, and clean electric energy sources.



Eletron 2007 featured NEMA and NEMA member booths.

During the three-day Congress, 14 speakers—some of whom held Master's, doctorates, and post-doctorate degrees—as well as other professionals with wide and recognized knowledge and experience from industry, academia, consulting, government, and electric utilities—made presentations on critical and current themes, showing trends and providing solutions. More than 150 qualified people attended the panels and interacted with the speakers through debate sessions. NEMA Brasil member Rockwell Automation greatly contributed to the success of the Industrial Automation Panel, making two excellent presentations.

According to Moreno, "Both the trade show and the Congress were a great success, with significant results for our members that shared the booth. The event was also important for NEMA Brasil to promote the Association's mission, objectives, and activities, as well as to expand our networking with local

companies, organizations, media, authorities, utilities, academia, and professionals."

"We plan to increase our support to and participation in the 2009 edition of Eletron and Eletricon, because we believe these events provide a great value to our members that want to start or grow their participation in the Brazilian marketplace," he added.

"Eletron 2007 was an opportunity to learn more about the market in Brazil and to meet with individuals from the industry," said Christopher Alva, director, Latin American Sales, Thomas & Betts. "Working with NEMA Brasil was an added benefit because of the immediate credibility gained with the assistance of Hilton Moreno and Décio Norberto Gomes, both well-known professionals from within industry circles. Eletron 2007 was a fine experience and, on behalf of Thomas & Betts and the other participants in the NEMA booth, we would like to congratulate Hilton, Décio, and NEMA Brasil on a job well done!"



NEMA member Thomas & Betts manned an Eletron booth at the conference.

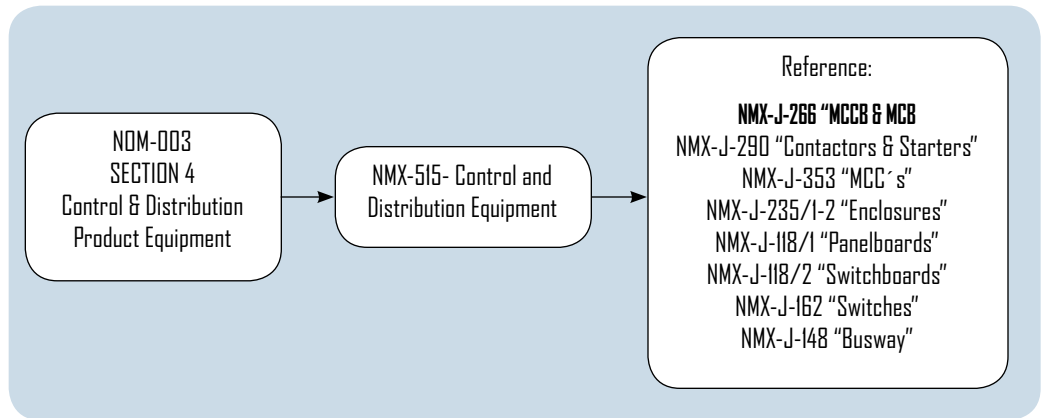
NEMA Mexico fights counterfeiting with standards

Several years ago, when counterfeiting started to become a big problem in Mexico, the Mexican electrical product manufacturers decided to increase the level of safety for electrical equipment and reduce the number of counterfeit products on the market. To do so, the manufacturers developed a plan to turn voluntary standards (NMX) into mandatory standards (NOM). The process proved to be a huge undertaking, so the manufacturers decided to create a mandatory standard that made reference to the NMX standards, which, by Mexican law, transformed the voluntary standards into mandatory regulations, thus speeding the process.

In January 2002, the new standard, NOM-003-SCFI-2000 *Electrical Products—Safety Specification*, was published. The new model included many different types of electrical equipment and devices.

Considerable work has concentrated on Section 4, Control and Distribution Equipment. The relevant NMX for these types of products is NMX-515 distribution and control equipment—general safety requirements—specifications and test methods. The scope of NMX-515 includes:

- Definition of distribution and control products based on features and functions
- Distribution and control products; and equipment



for residential, commercial, and industrial applications

- Voltage range from 24 to 1000 Vac

The following products are covered:

- Contactors and starters
- Overload relays
- Pushbuttons and man-machine dialogue
- Molded case circuit breakers (MCCBs) and molded case breakers (MCBs)
- Safety switches
- Timers and relays
- Panelboards, switchboards, transfer panels, control panels
- Lighting controls and dimmers (industrial)
- Enclosures
- Motor control centers
- Busway
- Switches
- Other control and switching devices and accessories

NMX-515 references several different product standards to identify the specific testing for each product.

In 2003, because of increased counterfeiting of MCCBs and MCBs, CANAME and ANCE members decided to include the first refer-

ence product standard, NMX-J-266 *Electrical Products—Molded Case Circuit Breakers—Specifications and Test Methods*. Later that year, ANCE announced that since NOM-003 made reference to NMX-515, and NMX-515 in turn to NMX-266, beginning in September 2003, all breakers in Mexico would have to be tested with NMX-266. This led a group of IEC manufacturers, importers, and distributors to complain to Mexico's general bureau of standards, Dirección General De Normas (DGN) that NMX-266 was intended to test only U.S. breaker technology and that if enforced, could push IEC breakers out of the market.


The solution was a decision by DGN, with NEMA's support, to announce that the NMX 515 standard would be converted into a stand-alone NOM standard that would reference both North American-type circuit breakers and IEC-type breakers, covered under two new Mexican standards as follows:

- NMX-J-538/2-ANCE-2005, *Low-voltage switchgear and con-*

trolgear—Part 2: Circuit breakers, based on IEC 60947-2 (alternative standard of NMX-266)

- NMX-J-569-ANCE-2005, *Electrical Accessories—Circuit breakers for overcurrent protection for household and similar installations—Part 1: Circuit breakers for A.C. operation*, based on IEC/CEI 60898-1 (alternative standard of NMX-266)

The conversion of NMX-515 into a NOM standard was completed last year, and the draft was sent to DGN. Despite some delays due to a change in administrations, the working group recently received a response from DGN, signaling that the process is under way. While the completion of the process still depends upon action by two government agencies, NEMA Mexico is pressing at the highest levels to highlight the importance of issuing the standard in a timely manner to assist in our anti-counterfeit efforts.

It is expected that the standard will be issued in 2007. 

Gustavo Dominguez

Electrical spacings—the big and small of it

Meeting of IEC SC17B Spacing Task Force

NEMA hosted a meeting of international experts to discuss requirements for electrical spacings in an effort to achieve harmonization between standards published by the International Electrotechnical Commission (IEC) and by Underwriters Laboratories (UL). The IEC is a standards-writing body consisting of member countries developing requirements for electrical and electronic products and installations. UL is a major standards-writing and product-certification organization in the United States with affiliates in many areas throughout the world.

Harmonization of requirements would benefit manufacturers, certifiers, and end users by establishing a single set of specifications that can be applied to products with the assurance of consistent quality throughout the product life cycle. The particular meeting hosted by NEMA was only for a single IEC technical committee (SC17B—low-voltage switchgear and control gear); however, the potential result of achieving harmonization could be applied across a broad spectrum of products covering nearly every section within NEMA and possibly far beyond its scope.

Why have electrical spacings?

You might ask why electrical spacings—referred to as clearances (through air) and creepage distances (over surface)—are important. The answer is that they aid in preventing the risk of electric shock and fire. If the spacings are too small for the application, electricity may bridge the gap, resulting in a potentially hazardous voltage becoming accessible on metal parts. Similarly, when the space between two conductive parts that should be separated is insufficient, it is possible for arcing or for a high level of current flow to occur, which may start a fire in the equipment.

During this discussion, several aspects of the requirements used for evaluation of the adequacy of the electrical spacings were discussed, including characteristics of the insulating materials used to hold


conductive parts apart or used to provide additional barriers between the parts, and the concerns that exist at the points on equipment where the wires (conductors) are attached to bring in or send out electrical power.

Ultimate goal: harmonization of UL60947-1 and IEC 60947-1

A review was made of the background and results of the U.S. proposal to include comparative tracking index (CTI) a list of materials to be granted historical acceptance in IEC 60947-1.

It was noted that the hot wire ignition (HWI) test in IEC may be withdrawn as an option for materials requirements. It was also noted that there are some old and some new materials that are weak in the area of CTI. Testing done by one company seemed to demonstrate that there is minimal influence by CTI with respect to the Dielectric Voltage Withstand test (hi-pot™) after cycling under load, especially in relation to the larger effects from a change in contact material. There was general agreement that a number of material characteristics must be considered in evaluating the suitability of plastics (insulating materials) for IEC and UL 60947 applications. In addition, the requirements for material selection for direct support are different from the requirements for spacings, and must be considered separately; however, there is a relationship between the two due to the use of similar characteristics for the materials.

Conclusions:

- CTI must be addressed only in consideration of creepage distances as specified in UL 840 for U.S. applications.
- No other changes are needed for a UL-adopted document.
- There is a need to include the declaration of impulse rating, in which insulation coordination concepts are applied to spacings, which would be a new concept for manufacturers and users.
- It will still be necessary to evaluate field wiring terminals using different criteria from IEC requirements because of the concerns for installation and maintenance practices in the United States.
- Because of concerns for the suitability of some historically accepted (grandfathered) materials, inclusion of a list of such materials may not be proposed for inclusion in IEC documents.
- With respect to HWI, because TC89 is in the process of reviewing the test, it was decided to make no changes at this time. It was noted that SC17B will send correspondence to IEC's central office requesting a workshop addressing fire behavior requirements for products used in the same environment. The HWI test is still included in ASTM documents and UL standards. These conclusions set the stage for continued collaboration efforts to achieve harmonized documents that will benefit a full range of interested parties. 

Ken Gettman, 703.841.3254
ken_gettman@nema.org



House passes energy legislation with NEMA provisions

In a rare Saturday session before recessing for August, the House of Representatives approved an energy tax bill and overall energy legislation containing provisions backed and advocated by NEMA on August 4.

The House approved, by a vote of 221 to 189, the energy tax legislation, H.R. 2776 *The Renewable Energy and Energy Conservation Tax Act of 2007*. The \$16 billion bill accelerates the use of clean domestic renewable energy sources, promotes the use of energy-efficient products and conservation, and increases research and development of clean renewable and energy-efficient technologies. Two NEMA-advocated provisions were included: the extension of the energy-efficient Commercial Building Tax Deduction (CBTD) through December 31, 2013 and a five-year depreciation for smart electricity meters installed by electric utilities. The CBTD will expire at the end of 2008, and is the first provision to provide incentive to building owners to upgrade existing buildings and build new energy-efficient ones. Qualified building investments are eligible for up to \$1.80 per square foot tax deduction, including interior lighting, HVAC/hot water, and building envelope. The CBTD was estimated to cost \$901 million.

The metering provision will encourage the use of smart meters by utilities. Other provisions include extension of the wind, biomass, and geothermal tax credit through 2012, solar energy and fuel cell credit through 2016, a \$4,000 plug-in hybrid vehicle credit, \$6 billion in new "green" bonds allocated to the states and municipalities through which consumers can make improvements to existing homes, and tax credit for purchase of energy-efficient home appliances through 2010. The \$16 billion price tag for the bill is paid for through the elimination of certain oil and gas tax breaks that the House approved in January 2006 in H.R. 6.

The House also approved, by a vote of 241 to 172, H.R. 3221, *The New Direction for Energy Independence, National Security, and Customer Protection Act of 2007*. H.R. 3221 was the composite of 10 different bills, including legislation about which NEMA testified in May before the House Energy and Commerce Committee. The bill contains NEMA-backed provisions that set new federal energy-conservation standards for premium efficiency electric motors, metal halide lighting fixtures, certain incandescent reflector bulbs, and standby power. A provision setting standards for general-service light bulbs was included, but in a letter to House leadership prior to the vote, NEMA emphasized that the industry cannot support this provision until several important elements—including timelines, standards levels, and state pre-emption—are revised.

NEMA provisions in the transmission and distribution area included deployment of smart-grid technologies through demonstration projects, development of interoperability protocols and model standards for smart grids, and creation of a \$750 million Department of Energy (DOE) matching grant program to reimburse 25 percent of the smart grid investment costs.

Additional provisions on which NEMA worked include national targets for improvement in building codes and assistance to states in meeting them, requirements to increase the efficiency of existing federal buildings, and procurement of energy-efficient lighting products, extension of energy savings performance contracts by federal agencies, and provisions to strengthen the DOE's standards setting program. An important provision promoted by NEMA to establish an expedited rulemaking process when a consensus energy-conservation standard is recommended to DOE was also approved. NEMA also successfully prevented inclusion of a provision that would have weakened federal preemption, breeding a patchwork of state standards.

Twenty-three amendments were permitted to come to the floor for debate. An amendment for a national renewable portfolio standard (RPS) by Rep. Tom Udall (D-N.M.) was approved by a vote of 220 to 190. It requires investor-owned utilities to generate 15 percent of their electricity from renewable sources of energy by 2020. Significantly, up to four percent of the renewables mandate can come from reducing electricity demand through energy efficiency. Nearly half of the states have enacted state-wide RPS generation requirements, but this amendment represents the first national mandate. Rural electrical cooperatives and municipally owned utilities were exempted in the amendment.

An amendment that would have weakened provisions from the Energy Policy Act (EPA) of 2005 on federal backstop authority on siting transmission lines was defeated by a vote of 245 to 169. NEMA had lobbied in support of preserving the existing EPA provision.

The tax bill was ultimately merged into H.R. 3221. The House energy legislation does not contain provisions to promote nuclear power, coal-to-liquid plants, gas or oil offshore exploration, or new vehicle-fuel-economy standards. The House is expected to take up fuel-economy standards as part of its climate-change legislation this fall. Notably, the Senate energy legislation approved in June contains vehicle fuel standards, but does not have an RPS. The two bills must now be reconciled in a joint conference committee where the real politics will play after Congress returns in September.

Kyle Pitsor, 703.841.3274
kyl_pitsor@nema.org

“Call to Action” moves ahead

In November 2006, NEMA, recognizing the global trend toward environmentally conscious design, announced a voluntary commitment to limit the use of hazardous materials in electrical products. Termed the NEMA “Call to Action,” this initiative reflects the industry’s determination to be leaders in the environmental arena without compromising its high standards of product safety and performance.

In recent months, NEMA product sections have been engaged in the process of evaluating product lines that fall within Phase I of the commitment to determine whether application exemptions are warranted; in other words, where proven, reliable alternatives to hazardous materials are not yet available. After discussion within and among member companies, 11 sections ultimately declared the need for a total of 22 application exemptions.

Meanwhile, NEMA staff has been pursuing another goal of the Call to Action—prevention of an inconsistent patchwork of product design requirements at the state level, which ultimately would increase costs to consumers and impede manufacturer job growth. This objective is embodied in the guiding principles behind the call to action. Joel Saltzman, Mark Kohorst, and Craig Updyke of NEMA Government Relations conferred with key staffers



for U.S. House and Senate members and committees to advise staffers of NEMA’s voluntary initiative and to develop a base of support for federal legislation.

The meetings to-date have been encouraging and productive, with staff members on both sides of the aisle expressing support for the proactive nature of NEMA’s call to action and offering suggestions for how to smooth its transformation into a federal standard. This input is useful in determining the most effective legislative approach to such issues as

product scope and state pre-emption, as well as political strategies that will maximize the likelihood of passage.

Internally, the newly formed NEMA Call to Action legislative task force held an inaugural conference call in August and convened its first face-to-face meeting in early September. At the meeting, the members were briefed on the aforementioned activities on Capitol Hill, reviewed the prospects of a regulatory approach, and presented a draft legislative framework.

While much has been accomplished, we still are

at an early stage of what is expected to be a multi-year process. NEMA staff will be working closely with member company representatives to overcome the technical and political challenges that lie ahead.

Mark Kohorst, 703.841.3249
mar_kohorst@nema.org

Washington and Bangkok terminate FTA talks

A free-trade agreement between the United States and Thailand would have provided an excellent opportunity for NEMA mem-

bers to do business in Thailand's up-and-coming economy and market. However, because the talks had already been on hold for several years due to fundamental differences and Thai domestic political turmoil, the formal ending of negotiations in July was not a tremendous surprise.

John Meakem 703.841.3243
joh_meakem@nema.org

NEMA conducts freshman Congressional staff briefings

Throughout June and July, representatives from NEMA's Government Relations Department were on Capitol


Hill meeting with the staff of the 65 freshman members of Congress. The meetings are part of NEMA's continuing efforts to build and sustain strong relationships on the Hill in order to advance the interests of its members.

Representatives from NEMA sat with legislative assistants who deal with industry issues, such as trade and energy, and outlined NEMA's goals and purpose, including the its three strategic initiatives, before delving into specific policy questions. Policy discussions included NEMA's



support for bilateral trade agreements with such countries as Panama, South Korea, and Peru, and NEMA's leadership in energy efficiency and environmental design. NEMA representatives

delivered packets containing issue briefs on these and many other topics, ranging from anti-counterfeiting and medical imaging technology to general background on the electroindustry. The meetings were very positive, and served as an opportunity to establish constructive and collaborative relationships with newly elected members of Congress.

For additional information, please contact Kyle Pitsor at 703.841.3274 or kylepitsor@nema.org. 

Kevin Lownds 703.841.3234
kevin.lownds@nema.org

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ei standardization trends

NEMA to explore image data standardization for airport security

NEMA recently launched an effort to develop a standard for airport security and checked baggage. On July 31, representatives from GE Security, L-3 Communications, Smiths Detection, Control Screening/Autoclear, and Siemens met at NEMA headquarters to identify starting points for the standard. The group agreed to begin by considering the exchange of calibrated full-resolution two-dimensional images and three-dimensional volumes represented by two-dimensional computer tomography slices. The purpose of the standard will be to allow for the inspection of checked

baggage to identify explosive materials.

Gordon Gillerman of the National Institute of Standards and Technology (NIST) reviewed the current status of the x-ray standards working groups, which are developing image-quality standards for four classes of x-ray security screening equipment, including:

- Checkpoint cabinet x-ray systems (ANSI N42.44)
- Computed tomography systems (ANSI N42.45)
- Cargo and vehicle systems (ANSI N42.42)
- Human subjects screening systems (ANSI N42.47)

According to *Security Products*, the Transportation Security Administration (TSA) recently unveiled plans to begin testing advance tech-

nology (AT) x-ray machines, including multi-view and high-definition x-rays, at security checkpoints in the coming weeks. These new tools will provide greatly enhanced explosive detection capabilities for carry-on baggage.

While this technology is used worldwide for checked baggage, this initiative marks the first time that multi-view and high-definition x-ray systems will be deployed to security checkpoints specifically to screen carry-on bags.

In response to the tremendous growth in homeland security technology, NEMA is working with manufacturers to identify how the *Digital Imaging and Communications in Medicine* (DICOM) standard can be used in this type of technology. Developed by the Medical Imaging and Technology Alliance (MITA), a division of NEMA, DICOM is the industry standard for digital imaging and communications in medicine. DICOM enables network and component integration in the sending and receiving of digital images and related information. It covers most image formats for all of medicine, and is a specification for messaging and communication between imaging machines.

DICOM can be adapted to areas of homeland security that use imaging technologies where an image and its accompanying data must be shared, stored, and retrieved.

Because DICOM includes imaging technologies (modalities) such as x-ray,

ultrasound, and computed tomography, and is adaptable to other industries in which imaging and information/data transport is important, it can play an important role in homeland security where the handling of images is critical to assuring the safety of the U.S. borders and ports, such as container security and cargo handling.

Harry Massey, 703.841.3287
har_massey@nema.org

NEMA and NTCIP to help with new traffic signal control technology

Any modern road warrior who travels around the United States knows that traffic signal displays can be different in various parts of the country. So, get ready to see some new displays in your neighborhood—such as flashing yellow arrows telling drivers when to turn—if you haven't seen them installed already. Other developments are also on the way, all to improve the management and control of the country's traffic.

The modern electric traffic signal is an American invention, dating back to 1912. In 1920, the first three-color traffic signal was installed in Detroit. Depending upon the jurisdiction, the individual colored lights can appear separately or with two illuminated at the same time—in the United States, a “three-state” display is common, in the sequence green-amber-red-green. Turns from the roadway can be instructed



by signs ("No Turn on Red") or with red and green arrows, and displayed in "protected" or "permissive" signals, depending on timing features.

The most visible change in signal system displays started in the mid-1990s with colored LED-based modules replacing the 150W incandescent lamps that used to shine behind color filters. The energy-efficiency-inspired upgrades to LEDs were included in the Energy Policy Act of 2005 for new equipment made after January 2006.

The *Manual on Uniform Traffic Control Devices* (MUTCD) defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways. The MUTCD is published by the Federal Highway Administration (FHWA) under Title 23 of the Code of Federal Regulations, and is also listed as ANSI standard AS 1742. The MUTCD includes specifications for signs, pavement markings, and traffic signals.

So what "new thing" can drivers expect to see? Flashing yellow arrows! In March 2006, FHWA issued interim approval for the optional use of a flashing yellow arrow (FYA) signal indication as the signal display for left-turn movements during permissive turn intervals at signalized locations. That meant that the FYA was approved to resolve the inadvertent mistakes coming from a variety


of different indications and signal face arrangements for permissive left turns in which drivers thought that their left turn had the right of way over opposing traffic. In a seven-year government research study, the FYA was found to have a high level of understanding and correct response by left-turn drivers and a lower misunderstanding rate than the circular green display. The FYA is expected to be part of official rulemaking for the next edition of the MUTCD, and drivers can already see FYAs in many jurisdictions, such as Beaverton, Oregon; Broward County, Florida; and Howell County, Michigan.

In an example of what prompts standards updates, the FYA has now introduced changes to both the NTCIP 1202, *Objects for Actuated Signal Control*, and the NEMA TS 2, *Traffic Controller Assemblies*. Revisions are needed in these software and hardware standards to include the more complex control logic for the FYA. The NTCIP 1202 is the data dictionary standard for signal control, part of the NTCIP family of traffic management standards from NEMA and its two partner standards organization.

As drivers may also have noticed, highway intersections are becoming better equipped to detect and manage ever-increasing traffic volume. In many instances, TV cameras mounted on traffic signal masts aren't "Big Brother" watching you; they're part of the vehicle detection

system. Replacing the previous "induction loops" of wire cable cut into the pavement, the TV cameras use "machine vision" to process the video image and determine vehicle presence, queue length, or movement; and then activate the signal accordingly.

In addition to new signal displays and vehicle detection, traffic signal controllers can be equipped with a new generation of software. A significant portion of traffic delays on arterial routes are the result of outdated or poor traffic signal timing. For several years, four NEMA Transportation Section members have participated with the FHWA Turner-Fairbank Highway Research Center to develop the Adaptive Control Software (ACS-Lite). Rather than use the current, widely-deployed technology of pre-programmed traffic signal timing plans, the ACS-Lite adapts to minute-by-minute changes in the number of vehicles on each street, and then changes the signal timing appropriately. ACS field tests included Siemens/ITS Eagle controllers in Houston; Quixote Traffic Peek® controllers in St. Petersburg and Tampa; McCain® controllers in San Diego; and Econolite® brand controllers in Gahanna, Ohio.

NEMA and its member companies will provide the innovative products and technologies to better manage the signalized intersections and traffic flow down the road. 

Bruce Schopp, 703.841.3231
bru_schopp@nema.org

NEMA extends a hearty welcome to its newest member companies and associate members!

Members:

AADCO Medical, Inc.
Allied Bolt, Inc.
AMI Doduco
Arcalux Corporation
Aribex, Inc.
Baldor—Dodge—Reliance
BJB Electric L.P.
Braeburn Systems LLC
Cerro Wire & Cable Co., Inc.
Crest Healthcare Supply
DaPict
Evax Systems, Inc.
Home Free Inc.
Imaging Dynamics Company Ltd.
Implo Technologies Inc.
Intelight Inc.
Jeron Electronic Systems, Inc.
Kerite Company, The
L-3 Communications,
Power Paragon
Litetronics International, Inc.
DNYX Power Inc.
Potter Electric Signal Company
Prysmian Cables & Systems
Space Age Electronics, Inc.
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Consultants
FedBid, Inc.
Graybar Electric Company, Inc.
Greenlite Lighting Corporation
J. R. Bailey Utility Consulting Inc.
TIAX LLC

Robust growth in industrial production

Manufacturing sector industrial production grew for the second consecutive month, showing a 0.6 percent month-to-month increase in July a virtual match to the rate of growth observed in June. The year-over-year comparison for July grew 2.0 percent. Moreover,

manufacturing output has increased four of the last five months rebounding from a period of sluggishness dating back to September 2006. Similarly, the Institute for Supply Management's PMI, though declining to 53.8, registered its sixth consecutive month with a value above

50, a level indicative of an expanding manufacturing sector. Durable goods orders for July also came in at a strong reading, pointing to solid output gains in the upcoming months. **EI**

Stacey Harrison, 703.841.3269
sta_harrison@nema.org

	May 2006	Jun 2006	Jul 2006	May 2007	Jun 2007	Jul 2007
INDUSTRIAL PRODUCTION AND CAPACITY UTILIZATION						
Industrial production, manufacturing (Index, 2002 = 100)	112.6	113.5	113.9	114.8	115.5	116.2
Percent change, year over year				2.0%	1.7%	2.0%
Industrial production, electrical equipment, (Index, 2002 = 100)	109.8	109.9	113.3	122.5	125.4	126.8
Percent change, year over year				11.6%	14.1%	11.9%
Capacity utilization, manufacturing (percent)	80.3	80.8	80.9	80.0	80.4	80.7
Purchasing Managers' Index (value > 50 indicates expanding economy)	54.7	54.0	54.4	55.0	56.0	53.8
CONSTRUCTION						
Housing starts, single family (thousands of units, SAAR)	1.582	1.469	1.434	1.155	1.154	1.070
Percent change, year over year				-27.0%	-21.4%	-25.4%
Housing starts, multi family (thousands of units, SAAR)	0.362	0.350	0.312	0.285	0.316	0.311
Percent change, year over year				-21.3%	-9.7%	-0.3%
Nonresidential construction, Lodging (billions of dollars, SAAR)	16.835	18.036	18.527	28.214	29.154	—
Percent change, year over year				67.6%	61.6%	—
Nonresidential construction, Office (billions of dollars, SAAR)	44.725	46.237	48.803	53.651	54.285	—
Percent change, year over year				20.0%	17.4%	—
Nonresidential construction, Commercial (billions of dollars, SAAR)	70.022	70.524	71.594	82.348	82.509	—
Percent change, year over year				17.6%	17.0%	—
Nonresidential construction, Healthcare (billions of dollars, SAAR)	32.582	33.478	33.589	37.055	36.745	—
Percent change, year over year				13.7%	9.8%	—
Nonresidential construction, Communication (billions of dollars, SAAR)	20.944	21.470	21.302	26.297	25.660	—
Percent change, year over year				25.6%	19.5%	—
Nonresidential construction, Electric Power (billions of dollars, SAAR)	29.674	30.460	31.954	37.971	37.890	—
Percent change, year over year				28.0%	24.4%	—
Nonresidential construction, Manufacturing (billions of dollars, SAAR)	33.176	35.311	34.240	37.472	37.035	—
Percent change, year over year				12.9%	4.9%	—
EMPLOYMENT						
Employment, electrical equipment, NAICS 335 (thousands)	435.8	438.0	437.1	436.9	436.1	436.8
Percent change, year over year				0.3%	-0.4%	-0.1%
Unemployment (percent, SA)	4.6	4.6	4.8	4.5	4.5	4.6
PRICES AND INTEREST RATES						
Consumer price index (percent change, prior period)	0.5	0.2	0.4	0.7	0.2	0.1
Percent change, year over year				2.7	2.7	2.4
Producer price index, finished goods (percent change, prior period)	0.2	0.5	-0.1	0.9	-0.2	0.6
Percent change, year over year				3.9	3.2	3.9
Interest rate, 3-month Treasury (constant maturity, annual yield)	4.84	4.92	5.08	4.87	4.74	4.96
Interest rate, 10-year Treasury (constant maturity, annual yield)	5.11	5.11	5.09	4.75	5.10	5.00
Spread (10-year yield minus 3-month yield)	0.27	0.19	0.01	-0.12	0.36	0.04
MANUFACTURERS' SHIPMENTS AND INVENTORIES						
Value of Shipments: Electric Lighting Equipment (billions of 1996 dollars, SA)	1.148	1.155	1.203	1.248	1.224	—
Percent change, year over year				8.7%	6.0%	—
Value of Shipments: Electrical Equipment (billions of 1996 dollars, SA)	3.113	3.044	3.152	3.434	3.502	—
Percent change, year over year				10.3%	15.0%	—
Value of Inventories: Electric Lighting Equipment (billions of 1996 dollars, SA)	1.811	1.804	1.805	1.954	1.873	—
Percent change, year over year				7.9%	3.8%	—
Value of Inventories: Electrical Equipment (billions of 1996 dollars, SA)	4.615	4.752	4.906	5.216	5.215	—
Percent change, year over year				13.0%	9.7%	—
Inventory to Shipment Ratio: Electric Lighting Equipment (SA)	1.578	1.562	1.500	1.566	1.530	—
Percent change, year over year				-0.7%	-2.0%	—
Inventory to Shipment Ratio: Electrical Equipment (SA)	1.482	1.561	1.556	1.519	1.489	—
Percent change, year over year				2.5%	-4.6%	—

SA—Seasonally Adjusted SAAR—Seasonally Adjusted Annual Rate

Attaché... from page 3

As far as conformity assessment is concerned, the U.S. electrotechnical industry would prefer to see third-party testing with portable test results so that manufacturers can avoid duplicate testing. I will encourage European authorities to accept input from U.S. companies as policy is being developed.

Q: How much effort will you be investing into standards?

A: A key component of my new role will be investing significant effort into standards. I expect to enlist the aid of the U.S. private sector to be proactive and vocal in stating its viewpoints.

Q: Will you prepare a list of contacts for the Western Hemisphere?

A: To increase the opportunity for the U.S. industry to respond to emerging European standards, I will seek support from NEMA and other U.S. standards-

development organizations to organize a standards team similar to the Western Hemisphere standards team I developed in my previous assignment in Mexico City. Issues of current significance include the Restriction of Hazardous Substances (ROHS) directive; the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) regulation; the Energy Using Products (EUP) framework directive; and the Metric Directive.


Q: How can we get anecdotal information on other industries' problems and their solutions?

A: It is possible for Commerce to provide a summary of the issues that can serve to advise other sectors. The best course of action is to identify issues of interest to your industry and ask which other industries have shown interest in the same subject(s). At the same time, it is important to note that discussions among

various stakeholders in the private sector are a great resource.

Louis Santamaria served as standards attaché in Mexico City since September 2003, where he had regional responsibility for Canada, Mexico, Central America, and the Caribbean, and was the coordinator for the Western Hemisphere Regional Standards Program (WHRSP).

A graduate of Georgetown University with an undergraduate degree in business administration and a master's degree in tourism from the University of Strathclyde in Glasgow, Scotland, Santamaria joined the U.S. Department of Commerce after serving as senior tourism marketing specialist for the Organization of American States with Pan American World Airways.

NEMA staff note that Santamaria has been the consummate professional colleague to the U.S. industry during his three-plus-year assignment in Mexico City. He is a trusted and expert resource. 

WG3 holds inaugural meeting

The first meeting of the new Working Group (WG) 3 on Performance Assessment of the International Electrotechnical Commission (IEC) Technical Committee 113 on Nanotechnology was held in San Francisco on July 20 and 21. Eighteen experts from seven countries attended primarily to build a consensus on terms of reference, scope, and title for WG3. The attendees also reviewed roadmaps for nanotechnology standardization and considered candidates for new work-item proposals (NWIPs).

The establishment of the terms of reference and scope for WG3 was no small task. Considering the scope of the Joint IEC TC 113/ISO TC 229 WG2 (JWG2) for characterization founded earlier this year, the experts had to examine carefully what aspects of standardization were appropriate for WG3 without overlapping with JWG2. Additionally, the work products of WG3 must address key deliverables, including fast methods for assessing nano-specific reliability, durability, failure mechanisms, statistical process control

(SPC), and generic nano-material specifications. Attendees determined that WG3's scope would be to develop standards for performance, reliability, and durability of nanoscale components and subassemblies used in electrotechnical products and systems. Such standards development would be expected to support the continuous improvement at all stages of the value-added chain; that chain ranges from raw and recycled materials to end-product use and disposal. It may also accelerate the pace of technological innovation in the marketplace.

Roadmaps established by the IEEE-Standards Association, the Nanoelectronics Standards Roadmap, and the International Electronics Manufacturing Initiative (iNEMI) were presented. IEEE considers organic sensor structures, conductive interconnects, nanowires properties, and conductive adhesives to be some of the keys focus areas for nanotechnology standards in coming years. The iNEMI roadmap suggests halogen-free printed wiring boards,

substrate surface finishes for lead-free assembly, and Velcro® nano-materials for mechanical attachment applications as focus areas.

The attendees reviewed and discussed two candidates for new NWIPs that may be appropriate for WG3. One included a draft general specification for nano-materials in electrical/electronic applications. If successful in the IEC process, this would likely become a technical specification rather than a standard. The other, a draft specification for carbon nanotube (CNT) characteristics, could serve as a roadmap for all other WG3 projects and as a guide for specifying CNT performance requirements. Such performance specifications are needed to ensure equity in the marketplace between sellers and buyers of CNTs. A NWIP for these performance specifications will be introduced to IEC/TC 113 and discussed at the next TC 113 plenary meeting, Dec. 3-7 in Singapore.

Mike Leibowitz, 703.841.3264
Mike_Leibowitz@nema.org

Current conditions EBCI retreats for second month in a row in August; future indicator continues to signal growth

NEMA's Electroindustry Business Confidence Index (EBCI) for current North American conditions slid for a second month in a row in August, dropping by 6.5 to 39.1. A reading of less than 50 is indicative of contractionary conditions. That August's figure declined in absolute terms from a July reading itself below 50 suggests that the deterioration in conditions accelerated from a month ago.

Moreover, the survey's measure of the mean *degree* of change in North American business conditions slipped to -0.4 from -0.3 in July (on a scale ranging from -5 [deteriorated significantly] through 0 [stayed the same] to +5 [improved significantly]). As recently as June, the mean degree of change was in positive territory at +0.1.

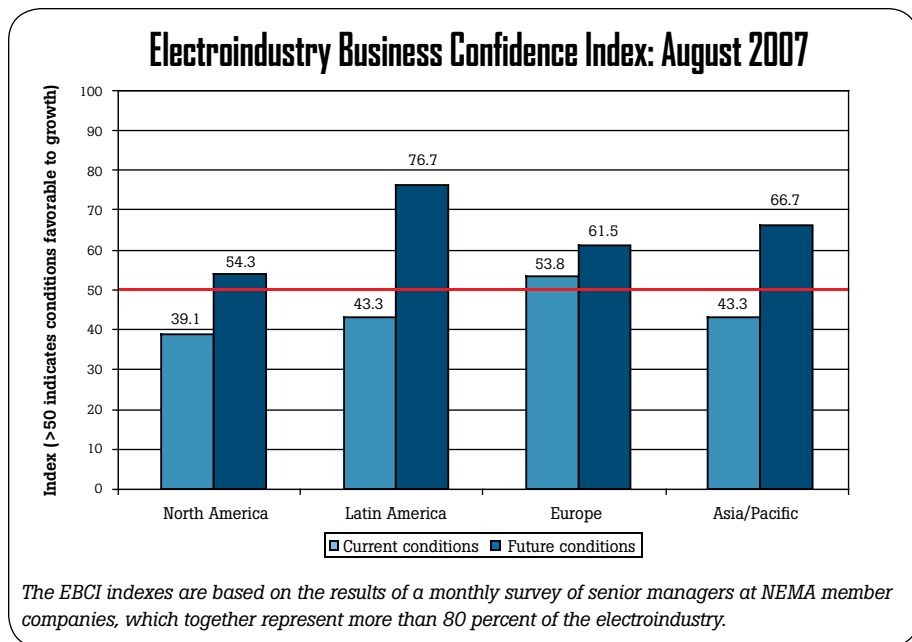
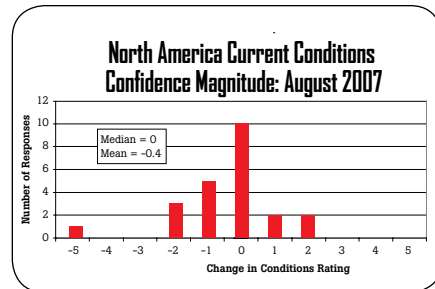
The six-month outlook, on the other hand, continued to provide some cause for optimism. Though the future conditions index for North America retreated slightly from July, it topped the "break-even" threshold of 50 for a fourth straight month at a solid 54.3.

Current conditions readings were

once again mixed in the other world regions included in the survey. European business conditions improved from a month ago in August, albeit at a slower rate, while the Latin American current conditions EBCI, meanwhile slipped into contractionary territory. The Asia/Pacific index also remained below 50, but improved markedly from a month ago.

The optimistic near-term North American outlook extended to the other world regions, with the Latin America, Europe, and Asia/Pacific future conditions EBCIs all coming in well above 50 in August **Ei**

Tim Gill, 703.841.3298
tim_gill@nema.org



The EBCI indexes are based on the results of a monthly survey of senior managers at NEMA member companies, which together represent more than 80 percent of the electroindustry.

Editor in Chief

Lissa D. Hurwitz 703.841.3222

Managing Editor

Min Shepherd 703.841.3286

Contributing Editor

Patricia Walsh 703.841.3225

Design and Production

The Magazine Group 202.331.7700
 Chad Townsend, Art Director

DEPARTMENT EDITORS

Spotlight on the Economy

Stacey Harrison 703.841.3269

Standardization Trends

Al Scolnik 703.841.3282

Washington Report

Kyle Pitsor 703.841.3274

ADVERTISING

National Advertising Director

Holly Townsend 301.215.6710

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