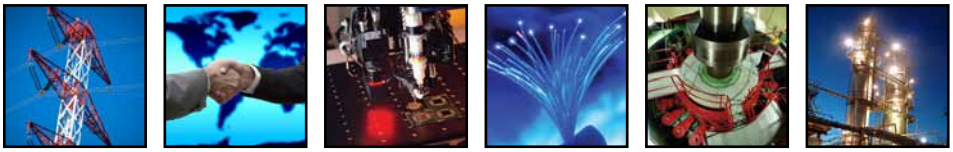
United States National Committee of the IEC

News and Notes



In This Issue

Volume 5 Number 2 Summer 2010

Since Thomas Edison's invention of the first commercially practical incandescent light bulb 130 years ago, electric lighting has transformed every aspect of our society and enabled us to see the world illuminated. And for much of the 20th century, the good-old lightbulb remained relatively unchanged. But a revolution has now taken hold: new developments in lighting technology are increasing efficiency, performance, and safety – at the speed of light!

Let There Be TC 34! Standards Development in a Changing Lighting World

*by **Mark E. Duffy, Ph.D.**, GE Lighting; USNC Technical Advisor (TA), IEC Subcommittee (SC) 34A ■ **Robert T. Nachtrieb, Ph.D.**, Lutron Electronics Co. Inc., USNC TA, IEC SC 34C ■ **Michael O'Boyle, LC**, Philips – Lightolier; USNC TA, IEC SC 34D ■ **Thomas J. Harding**, Venture Lighting International; Chairman, American National Standard Lighting Group (ANSLG) Committee 82 Working Group 02*

Change is the norm for the lighting industry today. The demand for more energy-efficient lighting and power-saving tools is driving a global response to develop new and better lighting systems. The impact of compact fluorescent lamps (CFL) replacing traditional incandescent lamps is evident on store shelves across America and abroad. In fact, thanks to legislation, availability of the old standard "light bulbs" will cease in the United States by 2014.

In addition, the emergence of solid-state light (SSL) sources is making light emitting diode (LED) lamps more available in the marketplace daily. The use of lighting control systems such as dimming, occupancy sensing, and daylight harvesting is increasingly spurred by new building codes and environmental incentives. High-intensity discharge (HID) lighting systems are entering the design realm of electronic ballasting for even greater system energy efficiency and lamp performance.

As a consequence of this revolution in lighting technology, the effort to maintain relevant, up-to-date standards for lighting is being redoubled by the members of the U.S. National Committee of the IEC within Technical Committee (TC) 34, *Lamps and related equipment*. The Technical Advisors (TAs) of the U.S. Technical Advisory Group (TAG) to TC 34 present the following highlights of this broad effort.

Measuring Up

The advent of LED chips with efficacies that surpass traditional incandescent filaments and rival available gas discharge alternatives such as CFL or low-wattage HID lamps has created a need for global standards of terminology, metrology, performance, and safety for SSL products and the drivers that operate them. New definitions are being developed in IEC Technical Specification (TS) 62504 that introduce a completely new dictionary of technical terms for accurate descriptions of LED chips and LED modules in general lighting.

U.S. experts working through the committees of the Illuminating Engineering

Published by the American National Standards Institute and its U.S. National Committee of the IEC

Standards Development in a Changing Lighting World (continued)

Society (IES) have defined two new foundational methods for measuring LED devices: LM-79-07 IES, *Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products,* and LM-80-08 IES, *Approved Method for Measuring Lumen Maintenance of LED Light Sources*. These new metrics represent a portion of the standards available for the development of global standards for LED lamp performance.

IEC 62612 is a document under development to define performance standards for self-ballasted general-service LED lamps. In this document, the traditional measure of lamp failure – when no light is emitted – is being redefined to account for the slow decay of the light output, since catastrophic failure of the LED chip is very rare. Many new users of the emerging SSL technology will adapt to this difference in lamp life expectancy when deciding to re-lamp their luminaires.

Other performance measures under consideration for inclusion in this standard are lamp wattage, lumen output, lumen maintenance, color rendering index (CRI), and color. As with CFL lamp replacements for traditional light bulbs, the LED lamps are available in a variety of shades of white. Production control of LED devices still requires a scheme for color binning. In an effort to maximize acceptable appearance compatibility of SSL general-service products with CFL products, the U.S. experts published ANSI/ANSLG C78.377, *Specifications for the Chromaticity of Solid State Lighting Products for Electric Lamps*. This American National Standard is gaining acceptance and utilization by LED chip manufacturers and LED lamp and module assemblers worldwide. There are also Publicly Available Specification (PAS) documents being prepared to address performance of LED modules and luminaires.

The USNC TAG to TC 34 is also making contributions to SSL safety standards through standards such as IEC 62031, *LED modules for general lighting - Safety specifications,* and IEC 62560, *Self-ballasted LED-lamps for general lighting services by voltage > 50 V - Safety specifications*. These standards will feature requirements for photo-biological safety marking, maximum temperature limits, and mechanical and electrical strength. Photo-biological safety will also be addressed at the luminaire level by revisions to IEC 60598-1, *Luminaires – Part 1: General requirements and tests*, to align it with IEC 62471, *Photo-biological safety of lamps and lamp systems*.

One new aspect of the new SSL technology is the need for thermal management of the heat generated within the LED chips. This usually requires a heat sink that makes the lamp heavier than a traditional light bulb. A safety limit for the maximum bending moment at the lamp cap is a key consideration for these standards. LED technology is also driving multiple revisions to IEC 60598-2-22, *Luminaires – Part 2-22: Particular requirements – Luminaires for emergency lighting*.

A Dim View

The use of controls in fluorescent lighting systems is becoming more common. Daylight harvesting systems use dimming ballasts to augment natural skylight with just enough electric fluorescent light to maintain desired illumination levels.

A consideration vital to the reliability of fluorescent lamp dimming systems is the supply of auxiliary heat to the lamp filaments when the lamp is dimmed to low output. This was the focus of a team of U.S. experts and a team of European experts each looking at the standardization issue in a different way. These two teams have met in IEC workshops since 2005 to maintain dialogue, continually challenging each other to additional data gathering and sharing.

In "a historic moment," as described by the workshop chairman, Anton Bouman of Philips Lighting, a global consensus was achieved to adopt a standardization framework

By 2014, consumers will find only CFLs – no more old-fashioned "light bulbs" – on American store shelves.

for dimming T5HO fluorescent lamps. The framework included concepts from both teams that will strengthen and provide a globally accepted dimming standard for fluorescent lamps. When completed, the new requirements will be included as amendments in the existing standards: IEC 60081, *Double-capped fluorescent lamps – Performance specifications*; IEC 60901, *Single-capped fluorescent lamps – Performance specifications*; and IEC 60929, *AC-supplied electronic ballasts for tubular fluorescent lamps – Performance requirements*.

The global legislative bans on incandescent lamps mentioned above, and the subsequent shift to self-ballasted compact fluorescent lamps (CFLi) has raised some concerns to be addressed by international safety and performance standards. Consumers will likely use CFLis with their previously installed incandescent dimmers, even though the CFLis and dimmers were not designed to operate together. In July 2009, Cristiano Massini, the chairman of IEC SC 23B, *Plugs, socket-outlets, and switches,* approached Ted Glenny, the chair of TC 34, proposing a joint IEC forum to address these issues. This coordinated group of experts from IEC

Standards Development in a Changing Lighting World (continued)

SC 23B; SC 34A, *Lamps;* SC 77A, *Low frequency phenomena;* and SC 17B, *Low-voltage switchgear and control gear,* are addressing four areas:

1. **Safety.** Incandescent dimmers and CFLi will inevitably be operated together as components of a system; therefore, complementary tests are needed in safety standards.
2. **Small relay contact welding from CFLi in-rush current.** If this occurs, relays will not open, and the lights will stay "on."
3. **Electromagnetic compatibility.** CFLi on incandescent (phase-cut) dimmers are presently required to meet stricter class-C specifications of IEC 61000-3-2, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase),* than the incandescent lamps they replace.
4. **Customer dissatisfaction** (aesthetic performance issues).

Since its formation, the joint forum has met in person three times, in Frankfurt and Paris. At the most recent meeting, it was decided to form two formal IEC Joint Working Groups (JWGs) between SC 34A; SC 34C, *Auxiliaries for lamps;* and SC 23B. The first JWG will address performance issues of dimmable CFLi and phase-cut dimmers; the second will consider a digital protocol for a new generation of power-line-carrier controls and CFLi. U.S. standards experts have been nominated to head both JWGs and are poised to deliver important specifications to benefit the global users of CFLi products.

Coordination Is Key

In HID lighting systems, the committees of the American National Standard Lighting Group (ANSLG) and the IEC are focusing on developing standards aimed at improving the compatibility of high-efficacy metal halide

Due to their wide spectrum, metal halide lamps are popular for use at sporting facilities.

lamps and the new, more efficient electronic ballasts. Until recently these committees had been working on separate but parallel paths towards similar standards. Today, the working groups (WGs) are sharing their documents in an attempt to develop global standards that had been impossible with the older, less efficient 50 or 60 hertz (Hz) magnetic ballast systems. With the opportunity electronics affords for adapting to different power line systems, global ballast designs are achievable – but standards are needed.

Currently, standards development groups in both the U.S., through ANSLG SC 82 WG 2, and Europe, through European Lamp Manufacturers Association for the Preparation of Standards (ELMAPS) TC 5, are working on electronic ballast standards for low-wattage metal halide lamps using a low-frequency square-wave circuit platform. Though very similar in terms of design parameters, some work is still needed in specification values to combine the two standards into a global one.

In addition, neither group has achieved consensus on a lamp starting standard, though both have worked at it for years. The two standards organizations have recognized the need for a cooperative effort to resolve this problem. U.S. experts, through the National Electrical Manufacturers Association (NEMA), are attempting to work with an outside laboratory to consolidate the testing. Efforts are underway to find funding for this project, with the intention of sharing the data with the ELMAPS TC 5 experts.

A second ballast project, involving the setting of high-frequency electronic ballast standards for mid-wattage metal halide systems, is just beginning in both ANSLG and ELMAPS. These ballasts, unlike those described above, operate lamps at very high frequencies, above 100 kilohertz (kHz). With metal halide lamps of similar design around the world, a cooperative effort to standardize high-frequency electronic ballasts is developing. As part of this effort, NEMA experts are attempting to use a third-party testing lab to consolidate design and performance data from the various worldwide lamp and ballast companies. If successful, this will accelerate the development of global standards for metal halide electronic ballasts.

Amidst these changing times, as the lighting industry transforms into ever more efficient, controlled, total lighting systems, the experts of USNC TC 34 are making essential contributions to globally recognized IEC standards. These efforts and documents are forming a solid basis for trust and confidence in the lighting systems for years to come.

Further Information

For more on the documents and activities of IEC TC 34, click here. ■

The authors and lighting experts (l.–r.) Robert Nachtrieb, Mark Duffy, and Michael O'Boyle (Thomas Harding not pictured)

FEATURED ARTICLE

Luminaire Performance and Safety Standards

by Michael O'Boyle, LC
USNC Technical Advisor, IEC Subcommittee 34D

On the global scale, there is currently a considerable amount of standards activity in the area of luminaires. The two main factors driving this action are increased focus on energy conservation and shifting lighting technologies.

Efficient Usage

Lighting consumes a considerable amount of electricity. An estimated 20 to 50 percent of generated power goes to electric lighting. In view of dwindling energy resources, and the strain on the present electrical power generation and distribution systems, regulators are looking more and more at the efficient use of lighting equipment.

IEC member nations are continually moving toward tighter regulation. In the U.S., government agencies are involved with both legislation and voluntary programs such as Department of Energy (DOE)/ Environmental Protection Agency (EPA) Energy Star program. In Canada, Natural Resources Canada (NRCan) is actively drafting new regulations.

In cooperation with these efforts, IEC Subcommitte (SC) 34D, *Luminaires,* has been busy developing standards to assure that claims of lighting system performance are consistently measured. U.S. stakeholders are reviewing new drafts of the technology-neutral Energy Star specification for luminaires as well as legislation aimed at energy conservation. And in Canada, stakeholders have commented on the NRCan announcement of current limiter requirements for specific luminaire types.

Modern LEDs are available across the visible, ultraviolet, and infrared wavelengths.

Emerging Technologies

Electric lighting has traditionally been produced using glass and metal lamps. Today, light emitting diode (LED) lighting has become a viable technology. We are now experiencing the digitization of lighting, similar to what happened to video technology over the past decade with the shift from cathode ray tube to flat screen technologies.

LED technology is rapidly evolving, and the need for standards is evident. Standards developers need to be cognizant of the fact that with such quick and continual change comes the need for standards that allow for future innovations.

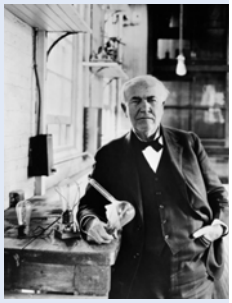
As safety standards are speedily developed, technology enablers are undergoing continuous refinement at the IEC and nationally. In the U.S., UL8750, *LED Equipment Safety Standard*, was published late last year and is now in its first revision cycle. At the IEC, multiple revisions are being made to the luminaire safety standards to address LED technologies. Photo-biological risk assessment of LED sources is the focus of several IEC standards, and North America is looking toward possible alignment with these requirements. And there are multiple LED performance standards under development both domestically and at IEC.

With all of this activity in energy efficiency and LED technology development, it is clearly an exciting and dynamic time to be involved with luminaire standards. ■

Michael O'Boyle is the manager of codes, standards, and laboratories at Philips Professional Luminiaire NA – LIGHTOLIER.

LATEST FROM THE IEC

IEC Launches New Thomas A. Edison Award



Thomas A. Edison

The illustrious name of Thomas A. Edison is being added to the IEC awards program this year through a new award recognizing exceptional current achievement by Technical Committee (TC) or Subcommittee (SC) officers or their conformity assessment counterparts in the management of their committees. These specifications clearly distinguished this new award from the Lord Kelvin Award, which recognizes outstanding long-term technical contributions, and from the 1906 Award, which marks extraordinary contributions by individual experts to specific standardization projects.

Beginning in 2010, the IEC Thomas A. Edison Award will recognize up to a total of nine officers of IEC TCs, SCs, conformity assessment systems, or their subsidiary bodies. Of these, up to seven awards may be made to IEC TC/SC officers (chairman, secretary, or assistant secretary), including CISPR and its subcommittees, and two to officers of a conformity assessment system or subsidiary body. IEC officers and staff and elected members of Standardization Manaement Board (SMB) or Conformity Assessment Board (CAB) are not eligible.

Nominations may be made by National Committees (NCs), the SMB and CAB chairmen and members, and by the IEC general secretary. The 2010 awards will be presented by the vice-president chairman of the SMB or CAB at the relevant meeting of the board during the IEC General Meeting in Seattle in October 2010. Full details of criteria, procedures, and deadlines for all three IEC awards can be found on the IEC website. ■

Automated Home Electronic Systems Enable Energy Efficiency

by Julia King, IEC freelance contributor

It's dusk and you enter your driveway. You press a key on your phone and the lights in your hallway turn on as if in welcome. The curtains have already closed, shutting out the dimming day and reducing heat loss. Your favorite piece of music starts up, broadcast around the house, helping to banish the cares of your hard day at work.

Developments in automated home electronic systems (HES) and the standards required for HES innovation are helping to bring this inviting image to reality in homes across the world.

Economic Drive

"Rising costs of energy are what may well drive forward the market for home automation," said Tim Schoechle, an expert in the field of smart automation. Mr. Schoechle has been involved in the home systems and networking marketplace for 30 years, and is the secretary of ISO/IEC Joint Technical Committee (JTC) 1 Subcommittee (SC) 25 Working Group (WG) 1, *Home electronic systems*. Experts from this group are working to produce standards for interconnecting gateways, allowing different pieces of equipment to be connected and provide interoperability.

IEC 62514, *Multimedia gateway in home networks – Guidelines,* describes the general guidelines for typical applications of the home multimedia gateway in home networks supporting internet protocol (IP) networking. It specifies recommended functions and services to be supported by the home multimedia gateway and, where appropriate, refers to existing standards supported in the market.

IEC 62481-1, *Digital living network alliance (DLNA) home networked device interoperability guidelines – Part 1: Architecture and protocols,* specifies a central management model in the home network that supports various interfaces from the point of view of the local – or home – and wide-area networks.

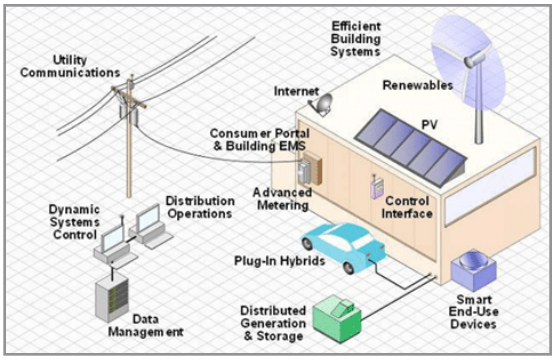
Other International Standards that have recently been published or are currently in development include:

- **ISO/IEC 15045-1, *Home electronic system – Guidelines for product interoperability*.** This standard's *Part 1: A residential gateway model for HES,* was published in 2004. *Part 2: Modularity and protocol,* will provide a specific modular architecture for alternative gateway implementations. This refers to the interconnection of different network configurations – more than two networks or multiple gateway networks rather than simple one-to-one networks.
- **ISO/IEC 18012-1, *Home electronic system – Guidelines for product interoperability*.** *Part 1: Introduction,* published in 2004, outlines the basic approach and covers system issues such as safety, management, and operation. *Part 2: Taxonomy and lexicon,* will provide the network protocol translation capabilities for the 15045 gateway above.

Consumer Demand

Mr. Schoechle believes that it will be the consumer that provides the driving force for efficient and interoperable energy management systems. "Consumers are seeing energy costs going up," he said. "There's an unsustainable and relentless increase in coal and natural gas costs, and a decreasing supply." He adds that the recent oil disaster in the Gulf of Mexico will add substantially to an increase in costs.

All of these factors, said Mr. Schoechle, will drive consumers towards the adoption of sustainable sources of energy production such as sun (photovoltaics) and wind. They represent the only possible approach to the provision of energy at a cost that will fall rather than rise. "The faster the costs go up, the more impetus there is for change," he said.



HES is one component of an effective Smart Grid.

Global Differences

The U.S. and China are two enormous marketplaces just starting to address the changing global picture. "Ironically, while China is a major producer of solar panels and of wind turbines, it still has a limited domestic marketplace for the goods it manufactures," said Mr. Schoechle. He adds that development of connections to the national grid has not followed at the same rate.

While cities such as Beijing are choking on the fumes produced by industry and traffic, the picture is entirely different in other parts of China. In remote Kunming, the capital of Yunnan province in southwestern China, the city is full of motor scooters. "However, all of the scooters are electric," Mr. Schoechle said. "This means that all of them need to be recharged. That's a real challenge for the providers of power."

This is a challenge that has been recognized in areas of Europe for some time. Renewable energy provision, notably in countries such as Germany and Norway, is therefore well advanced. In the U.S., however, "energy has been too cheap," said Mr. Schoechle. This means that implementation of renewable energy sources has lagged behind, comparatively speaking.

However, the picture is now rapidly changing, particularly with the help of government initiatives. The E.U. has announced their 20-20-20 target for carbon reduction. And,

Automated Home Electronic Systems Enable Energy Efficiency (continued)

Mr. Schoechle said, in areas of the U.S. such as his hometown of Boulder, Colorado, where there is a mandate to provide 30% of energy from renewable sources by 2015, consumers appear willing to pay more upfront for renewable energy that will ultimately mean lower costs later on.

Identifying Needs

Because there are literally thousands of different products that conform to hundreds of different standards and huge amounts of intellectual property tied up in these products, it is likely there will be social pressures for change – for boxes to be made to "talk" to one another, so that common household appliances such as washing machines, water heaters, and lighting circuits will converse over the same HES network. This is one of the challenges the Smart Grid has to contend with.

One test case of this comes from Pacific Northwest National Lab in Seattle, which ran trials to test devices' response to a system. The GridWise project, which was sponsored by the U.S. Department of Energy (DoE), tested the use of Internet-connected thermostats and other controls in 112 homes in the Seattle area. Utilities sent signals to appliances such as water heaters and dryers, changing their settings. This allowed the utilities to reduce power consumption and lessen the load on the grid. The year-long study "found Smart Grid technology performed as intended, saving consumers about 10% on their bills while easing strain on the power grid."

Stephen Pattenden, another member of ISO/IEC JTC 1 SC 25 WG 1 and of SC 25's *Project Team Taxonomy and Terminology* (PT TT), and an expert in the home systems marketplace based in the U.K., reported that "there is a fair amount going on at high level." Mr. Pattenden also provides the secretariat for the Application Home Initiative (TAHI), where the aim is "to accelerate the adoption of interoperable products and services by the connected home based user."

HES was the subject of a presentation at the European Smart Metering Summit in Amsterdam in early June. Mr. Pattenden asked, "What needs to happen for interoperability to be possible?" His conclusion was that things (objects, devices, networks) first need to be identified. Once this identification has happened, there must be an identified way of describing, configuring, and managing these things. "In the case that an object is available to a number of applications, which one sets the access rules?" he asked. "Which applications may do what?"

Developing Solutions

The trend is that any future electrical product will have embedded microprocessors. This will provide sufficient intelligence to enable communication with other such products and systems, even if multiple protocols are used. Smart metering and energy management systems will be the order of the day by 2020, believes Mr. Pattenden.

He recently held an open workshop at the European Committee for Electrotechnical Standardization (CENELEC) on an Interoperability Framework Requirements Specification (IFRS). He expressed that in the future, whatever HES technology is used by an individual device and whatever functions that device performs, it will be able to interact with other devices from other vendors.

So the future market for HES may be driven by Internet-controlled applications, or it might come from the emergence of products designed to further and enhance the Smart Grid. Either way, it will certainly be driven by consumer demand and consumer pressure to keep energy costs down.

Additional Requirements

Other factors that will need to be taken into consideration are the needs of home dwellers. Future intelligent systems need to be able to contribute to users' well-being by offering assisted-living features that can be monitored externally. For example, does water consumption suddenly drop? This could indicate that water is not being run in the home, which could signal a problem if the home dweller is elderly.

Sensors in the home could show that there is no movement; lights might not be turned on. Each of these could indicate that there is a problem. Of course, a balance needs to be drawn between intrusion and conscientious checking on users' well-being and security, to prevent any possible breaching of the boundaries of privacy and civil liberty.

Standards in the Lead

Standards can either lag or lead the market. "Sometimes industry cannot develop until the standards are there," said Mr. Schoechle. And in the case of HES, it seems likely that the standards makers will be the ones forging the new technological frontier.

"Some of the HES standards could be there within a year," he added. Products could then be on the market within 18 months. All that is needed is a few more visionaries listening to the needs of the consumer and developing the most effective standardization solutions. ■

Smart meters should be in widespread use by 2020.

LATEST FROM THE IEC

Roundup of Recent High-Level IEC Nominations

The past several months have seen a number of important changes within the IEC community around the globe.

IEC NC of Albania Names New President

A new president, Bashkim Muça, took office in the IEC National Committee (NC) of Albania in April 2010.

Mr. Muça, director general of the General Directorate of Standardization of Albania (DPS), succeeds Riza Hasanaj. DPS holds the Secretariat of the Albanian IEC NC.

Albania recently joined the IEC as an Associate Member.

New President for German NC

The IEC NC of Germany appointed a new president, Roland Bent, in April 2010. Mr. Bent succeeds Klaus Wucherer, who is IEC president-elect.

Mr. Bent, who is managing director of Phoenix Contact Germany, is also a voting member of the IEC Council Board (CB). The CB is a decision-making body composed of IEC officers and 15 voting members who are elected by council as individuals rather than as country representatives.

Indonesian NC Appoints New Secretary

Hanafiah Tar was named as secretary of the IEC NC of Indonesia in April 2010. He replaces Nurasiah Saleh Samhudi.

Mr. Tar is in charge of research and standardization cooperation at the National Standardization Agency of Indonesia (BSN), which holds the secretariat of the Indonesian IEC NC.

Indonesia is a Full Member of the IEC and is involved in 66 Technical Committees (TCs), 17 as a Participating (P-) Member, and 49 as an Observer (O-) Member.

New President for NC of Libyan Arab Jamahiriya

Abdulkader Sadek Akki became president of the IEC NC of Libyan Arab Jamahiriya in April 2010, replacing Abdalla I. Fadel.

Initially qualifying in electrical engineering and later specializing in telecommunications, Mr. Akki is a professor at AI-Fateh University in Tripoli, Libya.

The USNC congratulates all the newly appointed NC officers. ■

USNC NEWS

Social Media Hits USNC and IEC

According to the *Harvard Business Review*, the social media phenomenon shows no sign of slowing from its explosive rate of growth. Earlier this month, Twitter COO Dick Costolo said that his site alone is currently at 190 million users, who are collectively posting some 65 million messages per day.

The standardization community has not been left behind. The USNC, ANSI, and IEC are all now posting news on standards, conformity assessment activities, and related topics of interest via several social media sites and feeds.

The USNC encourages all members to check out the dynamic content at the following locations:

USNC/IEC 2010 General Meeting in Seattle Facebook Page
Click Here

IEC Facebook Page
Click Here

ANSI Facebook Page
Click Here

ANSI Linkedin
www.linkedin.com – search "ANSI"

IEC Twitter
http://twitter.com/IECStandards

IEC Linkedin
www.linkedin.com – search "IEC The Electrotechnical Standards Group" ■

USNC NEWS

ANSI Site Licenses Support USNC

To obtain the greatest value and convenience for your organization when buying IEC standards, USNC members should consider purchasing a site license from the American National Standards Institute (ANSI). ANSI site licenses enable specific standards or collections of standards to be shared within a network. They provide real-time access to standards data and offer automatic notication of updates and revisions to meet crucial business needs and give an organization a competitive edge. And the revenue ANSI receives directly supports the activities and initiatives of the USNC.

The USNC/IEC is a totally integrated committee of ANSI. As such, ANSI provides administrative support to the USNC and its nearly 1,400 participants, and the fiduciary framework by which the USNC's financial obligations are met, including the payment of annual dues to IEC. And since ANSI is a non-profit organization, the revenue earned from your purchase helps support the programs and services offered to USNC members.

When you purchase a site license from ANSI you are helping to bolster U.S. leadership at the IEC table – and gaining the benefits of easy accessibility, total customization, and affordable pricing for your organization's standards needs.

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USNC NEWS

USNC Names Participants for 2010 IEC Young Professionals Workshop

The USNC is pleased to announce the winners of the first ever competition for participation in the IEC Young Professionals Workshop. Held in conjunction with the IEC 2010 General Meeting in Seattle, the workshop will bring together professionals from around the world who are at the start of their careers in electrotechnical standardization and conformance.

The USNC received a number of applications for very well qualified candidates, making the selection committee's job difficult. The winners are:

- **Marcus K. Boolish** Mr. Boolish began his full time professional career with Energizer Battery Manufacturing, Inc., as a research and development engineer in the technology department. He has since progressed through a number of promotional assignments, from lithium secondary batteries to technical marketing. Mr. Boolish is currently a technology staff engineer with full managerial accountabilities in the product safety, standards, and environmental affairs department for Energizer.
- **Michael S. Kurzeja** As a maintenance supervisor for Exelon Nuclear, Mr. Kurzeja is responsible for the supervision of up to 25 individuals and relies heavily on conformance to multiple standards. He is also president of the North American Young Generation in Nuclear (NA-YGN), where he manages all functions of day-to-day operations for the organization, including recruiting and retention, conference planning, intersociety relations, media relations, and public outreach.
- **Daniel W. O'Shea** Mr. O'Shea is a senior staff engineer for plastics at Underwriters Laboratories (UL). He works closely with UL's conformity assessment services, driving global consistency, integrity, and engineering quality in the delivery of performance testing of plastics to determine compliance with various assessment schemes. He is also a lead instructor at UL University, where he develops and delivers internal training as well as external seminars and coursework on material compliance in electronics and electrical equipment applications.

The USNC's selectees will attend the 2010 IEC Young Professionals Workshop on October 10-12, alongside other young engineers and managers selected by IEC National Committees from around the world. The dedicated workshop will provide them the opportunity to learn more about the IEC, standardization strategies, and conformity assessment, and interact with their international counterparts. They will also be invited to attend the technical meetings where standards are developed, observe a meeting of the IEC Standardization Management Board, visit to local industry, and have the guidance of a mentor, among other opportunities.

"On behalf of the USNC, I'd like to particularly congratulate our three winners, and express the wish that we could have recognized all of the candidates," said Jim Matthews of Corning Incorporated and president of the USNC. "We look forward to having these truly deserving recipients participate in the first Young Professionals Workshop as part of our hosted General Meeting in Seattle this fall."

Further Information

For more details about the IEC Young Professionals Workshop, click here. ■

CONFORMITY ASSESSMENT

IECEE Enables Safe Lighting for Everyone, Everywhere

Switching a light on or off is such a routine task that we take it for granted. We can leave a light on for hours and it won't overheat or ignite. We know what kind of bulb to use thanks to the marking on the fixture. In short, we know our lighting is safe.

But this safety doesn't come out of nowhere. Industry, standardization, testing, and Certification Bodies (CBs) all collaborate to assure that the products we buy and use have the required safety levels.

IEC TCs: A Systems Approach

Lighting covers a vast number of applications across many different disciplines – think power supply, batteries, wires, switches, transformers, converters, starters, enclosures, digital control systems, and much more. To produce an International Standard for the lighting industry, many different IEC Technical Committees (TCs) are called on to cooperate.

Standards and conformance assure safe and reliable lighting.

The leading TC for lighting is IEC TC 34, *Lamps and related equipment*. TC 34's work is driven by rapid technological developments and changes in regulatory requirements that must be continuously incorporated into new and existing International Standards. Several Subcommittees (SCs) of IEC TC 34 deal with special projects in the area of new technologies: light emitting diodes (LEDs), OLEDs (organic LEDs), electronic operation of metal halide lamps, control gear design for fluorescent dimming, digital lighting interfaces, specifications for lampholders, and automotive lamps, for example.

IECEE Ensures Compliance

Without testing and certification, standards remain theoretical. The IEC System of Conformity Testing and Certification for Electrotechnical Equipment and Components (IECEE) has been testing and certifying lighting products for many years. The IECEE CB Scheme ensures compliance with the impressive list of IEC International Standards developed for the lighting industry.

Testing and certification in this area address performance and safety issues for a wide variety of products and their accessories. Lamps and luminaires in general, single- and double-capped fluorescent lamps, floodlights, LED modules for general lighting, cords, lampholders, switches, insulation, temperature control, wiring, and earthing are some examples of the products and related equipment that undergo testing.

Strong Demand for Lighting Certificates

Lighting is in the top-10 product categories for the number of issued CB test certificates. With 2,032 certificates issued in 2009, it is in fourth place right behind information technology and office equipment; household and similar equipment; and electronics/entertainment.

The IECEE Committee of Testing Laboratories (CTL) has established several Expert Task Forces (ETFs) that provide high-level expertise for each of the IECEE product categories. ETFs are responsible for the interpretation and uniform application of International Standards with a view to establishing harmonized testing procedures. ETF 5 is in charge of the lighting sector.

Further Information

For the complete list of International Standards on which the IECEE testing and certifying is based, visit the IECEE website. ■

CONFORMITY ASSESSMENT

IECEx Prolongs Equipment Life

One sector of activity essential to the explosive atmosphere (Ex) industry that doesn't get much publicity is repair and overhaul. In today's world it is often cheaper to replace a product or a piece of equipment than to have it repaired. Not so in the Ex industry: equipment and machinery used by companies operating in hazardous areas have a much higher capital cost than the same equipment used elsewhere. As a result, high-quailty repair is a key need.

The stringent safety parameters in force for other aspects of the Ex industry also apply to the repair and overhaul sector, and the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx) plays a crucial role in this arena. After putting in place a scheme for the certification of Ex equipment, IECEx went a step further and devised a new scheme addressing the assessment and certification of repair and overhaul facilities. Since its launch in late 2007, the IECEx Certified Service Facilities Scheme has expanded rapidly. The demand comes not only from industry but also from the repair shops themselves. The IECEx certification offers shops a competitive advantage and assures a commonality of views and languages with their customers from the Ex sector.

This year Cyclect of Singapore joined the list of Certified Service Facilities for repair and overhaul of rotating machinery, a first for the country. Underwriters Laboratories (UL) assessors from the IECEx-approved UL facility performed the initial assessment in late 2009 and issued the certificate of conformity in May 2010. ■

OFF THE GRID

Japanese Test Mass Introduction of Renewable Energy on Microgrid

The IEC Sector Board (SB) met in May in Naha, in southwestern Japan, to visit the pilot Smart Grid project due to launch in October 2010 on the island of Miyako-jima.

Miyako-jima is a subtropical island with abundant sun, ideal for solar power generation. Japan's Ministry of Economy, Trade and Industry (METI) chose it as a pilot demonstration area for a microgrid verification test facility. The project's goal is to understand the challenges of using renewable energies in a stabilized transmission and distribution system that can supply power at a reduced cost to remote islands.

Miyako-jima has just under 55,000 residents. Electricity is supplied by the Okinawa Electric Power Co. (OEPC), with an estimated 2008 peak power consumption of 53.5 megawatts (MW) and a low of 13.5 MW. The installed power capacity is 76.5 MW, of which 61.5 MW is produced from diesel and 15 MW from a gas turbine. Renewable energy sources account for 4.7 MW, of which 4.2 MW are wind-generated and 490 kilowatts (kW) are solar.

The pilot project comprises an entire Smart Grid of power stations, substations, and compact substations. Energy is generated by solar-, wind-, and internal-combustion-power generation systems. All are linked using overhead and underwater cables and managed by a supervisory regulating control system. The energy that is generated is stored in batteries: 3 MW sodium sulphur (Na-S) batteries at the power stations, 1 MW Na-S batteries at the substations, and 200 kW Lithium Ion fast-charging batteries for individual households.

The project aims to simulate user demand for electricity with both private household distribution and simulated factory needs. The system needs to be able to withstand massive variable input of solar- or wind-generated energy. It has to be able to cope with voltage build-up, surplus power, and the lack of frequency-adjustment capacity. The real challenge of the microgrid is not so much in meeting the power input, but in controlling its storage to provide steady output in any weather.

METI aims to use this project to identify the challenges that need to be solved before the construction of a next-generation intelligent-power transmission and distribution network that can cope with the mass introduction of solar power generation in the years to come. ■

LAUGH TRACK

QUESTION

How many electrical engineers does it take to change a light bulb?

ANSWER

None. They simply redefine darkness as the industry standard.

SAVE THE DATES

Save the Dates for Upcoming Events of Interest

SEPTEMBER 2010

TMC/Council Meeting
Wednesday–Thursday,
September 8–9, 2010
Underwriters Laboratories Office,
Research Triangle Park, NC

ANSI World Standards Week
Monday–Friday,
September 20–24, 2010
Arlington, VA

U.S. Celebration of World Standards Day
Thursday, September 23, 2010
Washington, DC

OCTOBER 2010

74th IEC General Meeting
Wednesday–Friday,
October 6–15, 2010
Seattle, WA

October 11	Standardization Management Board (SMB)
October 12	Conformity Assessment Board (CAB)
October 14	Council Board (CB)
October 15	Council

IEC Young Professionals Workshop
Sunday–Tuesday,
October 10–12, 2010
Seattle, WA

For a complete schedule of upcoming meetings, or for more information on any of the events listed above, visit www.ansi.org/calendar. Enter "USNC" or "IEC" in the key word search field to narrow the list of results.

IEC 2010 General Meeting in Seattle – Less Than 4 Months Away!

The United States is hosting the General Meeting of the International Electrotechnical Commission for only the sixth time since 1904. The event will be held in Seattle, Washington, during the period of October 6–15, 2010. More than 2,400 of the world's foremost electrotechnical experts are expected to attend, making it the largest GM in IEC history. More than 100 IEC Technical Committees and Subcommittees have been invited to the event.

Sponsorship opportunities are still available for IEC 2010. To learn more, visit www.ansi.org/usnc.

General Sponsors by Category as of June 2010

The USNC/IEC gratefully acknowledges the 58 General Sponsors that have already stepped forward to commit financial resources in support of IEC 2010:

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HOW TO CONTRIBUTE
Submit proposed news items to Tony Zertuche, USNC/IEC Deputy General Secretary, American National Standards Institute.
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Upcoming Issues of News & Notes – 2010

Quarter III: The Importance of Active Participation – "If you're not on the dance floor, you don't get to dance"

Quarter IV: System Standardization: Networking to Benefit Industry, Government, and Society