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**A** bundant scientific evidence shows that humanity has been exacting irreversible changes to the global environment. But governments, industries, organizations, and individuals are now waking up to the importance of the collective effort required to alter these unsustainable practices and protect our future. The IEC is a proven leader in the exploration and coordination of workable solutions for renewable energy sources, pollutant-free materials and processes, and all aspects of the standards required to assure the protection of the natural environment while advancing electrical technology.

## The International Electrotechnical Commission: Exploring the Recent History of Wind Technology

*by Sandy Butterfield, IEC TC 88 Chairman,  
Wind Program Chief Engineer,  
National Wind Technology Center,  
National Renewable Energy Laboratory*

**W**ind energy has expanded dramatically since the early 1980s, when small turbines dotted the hillsides of California. Those early machines had rudimentary controls and no condition monitoring, were unreliable, and required extensive maintenance. They had rated power levels of 50 to 300 kW. Designers had no standards to guide them, no validated design tools, and no third-party review or certification process.

When tax credits for wind turbines expired in the United States, many designers and researchers observed that the fleet reliability was not very impressive. Turbine performance was inconsistent, with frequent fatigue failures requiring excess maintenance, and investors were not happy with the costs or the energy revenues.

### Methods for a new design

European and U.S. research organizations began to study the failings of these early machines by conducting detailed field and laboratory tests. Their first finding was that it was not easy to get consistent results between different laboratories or test conditions.

The second discovery was that many of the original design-condition assumptions were overly simplistic: designers assumed that extreme loads would dominate the criteria and ignored fatigue loads. Extensive testing showed that fatigue loads were at least as important, and in many cases, more important. The design tools had lacked the necessary unsteady aerodynamic physical models, turbulent inflow models, and critical system dynamic coupling. It also became clear that blade design tools could not

capture all the detailed fabrication features that often became the root cause of failure.

From these test programs sprung new aerodynamic models, turbulent inflow models, and system dynamic computer codes. But researchers and designers realized that these tools were still not accurate enough to stand alone – they had to be tuned to match test data. Blades had to be tested in full scale. And a broad range of operating conditions had to be simulated to estimate 20 years of operation. (continued)



LATEST FROM THE IEC

## IEC Paves the Road to Global Smart Grid

Through the work of Strategic Group (SG) 3, the IEC is spearheading a global initiative to support the “smart” electric power grids



being developed worldwide with common technical standards that ensure interoperability, security, and energy savings.

An SG 3 workshop April 29 – 30 in Paris, hosted by UTE and EDF Group, brought together the world’s leading experts on Smart Grid technology to establish a roadmap for ensuring interoperability of systems. The experts – specialists in electrical generation, distribution, transmission, consumption, and measurement – represented Brazil, Canada, China, France, Germany, Italy, Japan, the Republic of Korea, the Netherlands, Switzerland, Sweden, the U.K., and the U.S.

Richard Schomberg, U.S. vice president research at EDF, chair of Technical Committee (TC) 8, and the SG 3 convener, reported on a definition of “Smart Grid” as the concept of modernizing the electric grid via the integration of the electrical and information technologies between any point of generation and any point of consumption.

Interoperability was identified as a critical challenge, integrating large numbers of complex technology “bricks” across the board. SG 3 identified 19 TCs whose standards play a role in the Smart Grid structure and will be consulted for information on gaps and overlaps in the standards for the framework.

SG 3 is helping to develop a web portal providing interested parties with a first release of the IEC Smart Grid framework. Manufacturers, designers, and distributors will have easy access to a single database of all IEC Smart Grid–related standards and guidance on how best to make use of them.

The next meeting of SG 3 will be held on September 28 – 29 in Washington, DC. ■

FEATURED ARTICLE

## The International Electrotechnical Commission: Exploring the Recent History of Wind Technology (continued)

The extrapolation to 20 years was not straightforward engineering. But methods of performing these analyses evolved along with testing methods that produced consistent results. In effect, a design process evolved.

### The role of International Standards

Once this experience began to mature, it was clear that standards were needed to assure future designs did not go the way of those from the early ’80s. These standards needed to describe how to perform tests consistently, use the test data to validate design models, and define “design load cases” that had proven to be critical for wind turbines. They had to be developed in a credible international forum.

IEC provided both the organizational structure and credibility that the wind industry needed. First, testing standards were developed, then design requirement standards, and later, offshore turbine design requirements were created. But these individual standards had to work in harmony to successfully map out a design process that could be used in certification.

In essence, a road map was needed to describe how to use all the standards as a complete collection of tools. IEC WT01, *System for Conformity Testing and Certification of Wind Turbines*, was drafted as the first internationally recognized wind turbine certification standard. Even though it violated IEC Conformity Assessment Board (CAB) rules for Technical Committee (TC) development of conformity assessment standards, it was allowed on a provisional basis.

A second draft was developed to accommodate the growing offshore market and other lessons learned. The CAB ruled out the possibility of it becoming a full standard because of the violation of the directives. But they recognized the need for road maps for sector-specific emerging

technologies. So the Strategic Management Board (SMB) and CAB collaborated to modify IEC directives to allow for such standards in specific cases. When TC 88 proposed a full standard for TS 61400-22, *Conformity testing and certification of wind turbines*, the SMB was compelled to grant the request under options in the new directives.

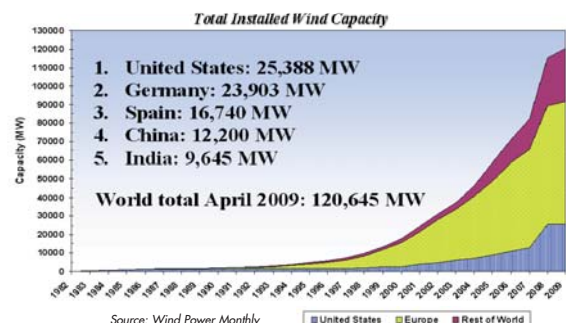
### Growth of an industry

At one time, utility companies considered wind power an insignificant, passing fad. Today, wind turbines have multi-megawatt ratings, sophisticated controls, and condition-monitoring systems on most of the drive trains. A typical modern wind plant may have more than 200 multi-megawatt turbines and may represent a \$600 million asset investment.

This new generation of turbines is far more reliable than those of the early ’80s. They operate at 95% to 98% availability, and energy production is predictable. The cost of wind energy has become competitive with fossil fuels, and with the exception of hydroelectric, it is significantly less costly than all the other renewable energies.

Investors have confidence in the technology, and large countries are depending on wind for significant percentages of their energy needs. Denmark gets more than 23% of their annual energy from wind while Germany and Spain each get about 8%. The U.S. is setting its sights on wind as one of its major sources as well.

Figure 1. Growth of wind energy worldwide



FEATURED ARTICLE

LATEST FROM THE IEC

## School in Ghana Wins wattwatt care4it Competition

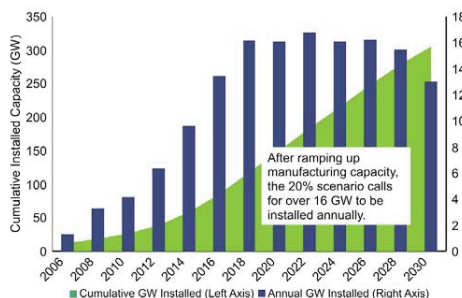
Figure 1 shows the growth in world wind energy capacity. Most of this growth has occurred in the last 10 years. For the first time, the United States took the lead in installed capacity with more than 25 gigawatts (GW) in 2009, but China is gaining fast. In January 2009, the worldwide installed wind capacity equaled about 10% of the total U.S. installed capacity of all forms of electrical generation.

In the early '80s, the U.S. industry comprised many U.S. manufacturers installing turbines in California; today's U.S. industry is made up of many American developers with very few domestic manufacturers. The emphasis has shifted from manufacturing turbines to installing, operating, and maintaining them, and maintenance is one of the leading roles the U.S. will play in the new wind industry.

Now that it is clear that wind energy will play a significant role in our nation's power generation mix, it is imperative that it is reliable and predictable. Because of the dispersed nature of this generation source, new and innovative ways of managing wind plants, which include health monitoring and automated diagnostics, will be required.

The National Renewable Energy Laboratory (NREL), the U.S. Department of Energy (DOE), and the American Wind Energy Association collaborated on a 2008 report on barriers for further growth in wind energy. The report concludes that there are no real supply-side or technical barriers to providing 20% of the U.S. electricity demand with wind energy by 2030.

Figure 2. U.S. wind industry growth goals



Based on this information, a realistic growth goal of 20% installed capacity by 2030 was set.

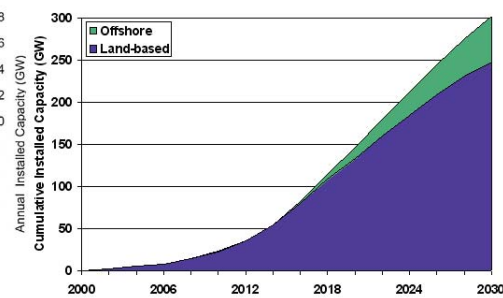
Figure 2 shows the cumulative growth and the annual installation rate required to achieve this goal. Last year, the United States installed 9 GW of new wind energy capacity, which far exceeded the expected rate of about 4 GW. This indicates that the 2030 goal is indeed realistic. Figure 3 shows how much of the U.S. capacity is likely to be made up of offshore wind turbines. Some reports put the expected capacity even higher, at 80 GW.

### Lessons learned for the future

This short history shows how important International Standards are in helping a fledgling industry capitalize on learning from early mistakes. The IEC provided a structure for what was a disorganized and immature collection of inventors. These inventors became leaders, forming profitable companies that are directing a completely new industry. In a very real sense, IEC facilitated the development of a critical element of wind energy's success.

The wind industry learned that it needed individual standards for testing, design requirements, power quality, and many other aspects for successful development. Each of these standards serves a different purpose and is used by a different group of professionals. But they all need to work in harmony. They all need to be part of an overall road map. That road map is IEC 61400-22 – a critical guide for certification bodies around the world. ■

Figure 3. Likely portion from offshore turbines



The wattwatt.com care4it competition, organized by the IEC in collaboration with the International Energy Agency (IEA), has awarded the first prize of \$10,000 to the Akosombo International School in Ghana for its video, "Use electricity wisely."

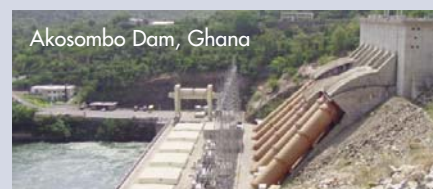
The competition invited students from around the world to submit ideas that increase awareness of the consumption of electricity and to suggest ways in which it might be used better or differently. The judges were unanimous in their decision that the Akosombo International School's two-minute video best demonstrated the theme via the specified elements, including:

- concern for a local site – the Akosombo River is threatened by the dam built on it to generate hydroelectricity
- increased awareness about electricity use – the entire school participated
- advice given – switch off electric appliances not being used
- creativity and originality – an original musical composition
- future implication – the possibility of spreading the conservation message to a much broader audience

Second prize went to the Kappelimäki primary school in Laitila, Finland, and third prize to the Chomutov Public Secondary School in the Czech Republic. IEC standardization strategy manager Jack Sheldon served as a judge, along with Nigel Jollands, principal administrator at IEA, and Bill Thompson, independent journalist.

### Further information

Visit [www.wattwatt.com/care4it/](http://www.wattwatt.com/care4it/). ■



LATEST FROM THE IEC

## New S+ Redline for Protection in Explosive Atmospheres

A popular IEC International Standard that concerns protection against unwanted industrial explosions is now available as an IEC Standards+ Redline version. S+ IEC 60079-18, *Explosive atmospheres - Part 18: Equipment protection by encapsulation "m,"* includes the new third edition with an annexed "marked up" version that shows what has been changed since the previous edition.

This part of IEC 60079 was developed by Technical Committee (TC) 31, *Equipment for explosive atmospheres*, and provides specific requirements for the construction, testing, and marking of electrical equipment, parts of electrical equipment, and Ex components with the "m" type of protection encapsulation intended for use in explosive gas atmospheres or explosive dust atmospheres. It applies only for encapsulated equipment where the rated voltage does not exceed 11 kilovolts (kV).

"Having the third edition of IEC 60079-18 as an IEC Standards+ will be a tremendous help for the international Ex community, providing Ex manufacturers, certification bodies, and testing laboratories with an immediate and accurate means of identifying changes from the previous edition of the standard," said Chris Agius, executive secretary of the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx). "Since all changes are clearly highlighted, users can in turn make the necessary modifications to their procedures and equipment."

"The fact that it is issued as an IEC publication provides the necessary level of authority and confidence that industry needs," Mr. Agius said. ■



LATEST FROM THE IEC

## Spring SMB Meeting in Geneva Advances Key Energy and Other Activities

The IEC Standardization Management Board (SMB) met in Geneva the week of June 9, 2009, and the USNC participated in discussion in the following critical areas:

### Renewable energy sources

Sweden gave a presentation on renewable energy sources that included a vision of the future wherein Europe and Asia might be connected with a "Super Highway Grid."

### Wind energy

Technical Committee (TC) 88 requested that TS 61400-22 be converted into a full standard in line with the recent revisions of the ISO/IEC Directives, which allow TCs to prepare sector-specific operating procedures for use by conformity assessment bodies (see featured article by TC 88's chairman, page 1).

### Smart Grid

Richard Schomberg, convener of Strategic Group (SG) 3, provided a report of SG 3's recent work (see Smart Grid article, page 2).

### Strategic Group 1

The SMB approved 11 of SG 1's 14 submitted recommendations (see SG 1 article, page 5). The opposition to three concerned development of a harmonized international labeling scheme for energy use of household appliances. The USNC and others felt that this should be decided by government regulatory agencies.

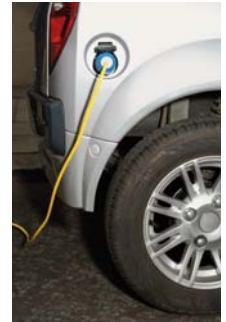
### New Strategic Group 4 on LVDC

An SG on low-voltage DC (LVDC) distribution systems was established under the convenership of Sweden. The objective is a systematic approach to LVDC in areas of use such as green data centers, commercial buildings, etc.

### Automotive electronics

Cyriacus Bleijs, chair of TC 69, *Electric road vehicles and electric industrial trucks*, reported on the joint work between his TC and International Organization for Standardization

(ISO) TC 22, *Road vehicles*. He emphasized the domination of car manufacturers in standardization and the need for electrical component producers to be more active. A high-level meeting of automotive electrical suppliers was proposed.



### ISO/IEC databases on adoption/use

A proposal for ISO and IEC to collect information on adoption/use of ISO and IEC standards into databases was considered. This would encourage harmonization of the contents within both IEC and ISO databases.

### Market relevance

The recommendations from the ISO/IEC Joint Directives Maintenance Team Task Force on Market Relevance were approved in principle. A final document will be delivered for a pilot program of selected TCs by July 2009, with results up for SMB review in June 2010.

### CENELEC

A report of the recent European Committee for Electrotechnical Standardization (CENELEC) Technical Board (BT) 134 meeting discussed whether International Special Committee on Radio Interference (CISPR) standards, which allow for alternative test methods for the same characteristics, were in conflict with the Internal Regulations of CENELEC. It was noted that CENELEC is considering whether IEC/IEEE standards covered under the joint development agreement in which the normative references will refer to International Standards should be excluded from the Dresden Agreement.

### SMB Strategy 2008 – 2011

German and Korean SMB members reported on how experts are recruited in their countries and how they identify new areas of work. ■

## LATEST FROM THE IEC

**Strategic Group 1 Produces Recommendations for E<sup>3</sup>**

A recent report by the IEC's Strategic Group (SG) 1 on e-cubed (electrical energy efficiency) and renewable resources produced 27 recommendations; 24 have already been approved by the Standardization Management Board (SMB) (see SMB article, page 4). The recommendations cover the entire spectrum of electrotechnology and include the following:

**Terminology**

SG 1 recommended that a group of experts be coordinated to develop a common general terminology in the field of energy efficiency, including metrics, calculation methods, and criteria. This group will take into account terminology not only of the IEC but also of the International Organization for Standardization (ISO), and possibly the International Telecommunication Union (ITU).

**Power generation and distribution**

SG 1 studied the operation of electrical power plants, an area where guidelines on best practices, including criteria for performance and efficiency, are critical. The group made recommendations for power transformers and distribution. It sought to lay down a common understanding of the calculation methods used for power transformers and provide guidelines for choosing the optimal transformer for a given application reducing network losses.

**Lighting – labelling and efficiency testing**

With the recent government attention paid to lighting efficiency, the SG 1 e-cubed group has



recommended that Technical Committee (TC) 34, *Lamps and related equipment*, develop energy-saving calculation standards or guidelines for lighting. At the same time it asked for existing standards to be improved by adding energy efficiency tests that would enable the minimum efficiency levels established by national regulations to be ascertained.

**Industrial automation**

SG 1 recommended that various TCs and Subcommittees (SCs) develop guidelines for the design and operation of energy efficient systems for industrial automation and industrial process control, looking at the matter from a system point of view. The IEC will organize a workshop when a detailed action plan for standardization activities can be determined and a joint working group set up.

**Transportation energy consumption**

Several recommendations were made concerning various means of transport, including trains, vehicles, and trucks, and other systems that use electrical drives, such as elevators, luggage movers in airports, or electric walkways. In all cases, the recommendations put the accent on reducing energy use while increasing efficiency.

**Impact of SG 1 work**

The new or refined International Standards that come about as a result of SG 1's recommendations will provide for a new breed of energy efficiency or performance measurement publications that will enable the market to quantify significant gains more closely. Decision makers, whether from government, utilities, or industry, will have global solutions at their disposal to deal with electricity production, transmission, and distribution – including generation from renewable energy sources – and make informed procurement decisions that will have a definite impact on future electrical energy efficiency. ■

## LATEST FROM THE IEC

**New Joint ISO/IEC Standard Addresses Internet Security**

Security is of great concern to the millions of users who exchange data



over the Web or store information in computers. To protect the confidentiality and integrity of transferred or stored data, the IEC and the International Organization for Standardization (ISO) have jointly developed a new standard which defines authenticated encryption mechanisms that provide an optimum level of security.

The standard, ISO/IEC 19772, *Information technology – Security techniques – Authenticated encryption*, specifies six encryption methods that can be used to assure data confidentiality, data integrity, and data origin authentication.

The standard takes the specific security needs of different operations into account. For instance, while encryption may be used to prevent eavesdropping when data is being exchanged, Message Authentication Codes (MACs) are ideal for protecting data from being modified. Some situations may require a combination of operations, with a variety of security guarantees. The mechanisms specified in the standard have been designed to maximize security and provide efficient processing of data.

“ISO/IEC 19772 will give confidence to users that their data is safe. It will be useful not only for protecting information, but also for furthering the development of online transactions and other applications involving sensitive data,” said Chris Mitchell, Ph.D., project editor of the standard.

ISO/IEC 19772 was prepared by the ISO/IEC Joint Technical Committee (JTC) 1, *Information Technology*, subcommittee (SC) 27, *IT Security techniques*.

**Further information**

Find out more about [ISO/IEC JTC 1](#). ■

LATEST FROM THE IEC

## The IEC Welcomes Albania as 76th Member Country

The IEC is pleased to welcome the Republic of Albania as its 76th member. This brings the total number of countries in the IEC Family to 159 – 76 Members and 83 Affiliates from developing countries – comprising more than 95% of the world’s population. Albania joins as an Associate Member, after gaining experience in the IEC Affiliate Country Programme.

Associate Members may access and comment on all IEC technical documents at any stage. During a General Meeting they may observe any Technical Committee (TC) or Subcommittee (SC), Council, or Standardization Management Board (SMB) meeting. On request to the General Secretary they may be involved in up to four TCs or SCs as Participating Members with the right to vote on technical work produced.

Albania has recently embarked on much democratic and economic development and is currently pursuing a path of increased Euro-Atlantic integration. This year the country has applied for official European Union membership.

### The Republic of Albania

Albania has an estimated population of 3,639,453.

Figures for 2007 show the country producing 2,892 billion kilowatt hours (kWh) of electricity while consuming 3,607 billion kWh.

### Contact information for Albania

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Website: <http://www.dps.gov.al> ■



LATEST FROM THE IEC

## IEC Standard Helps Curb Flu Pandemic

As a result of the recent threat of the new strain of the influenza A (H1N1) virus, also known as swine flu, which was confirmed as a pandemic by the World Health organization on June 11, 2009, some countries advised their citizens to refrain from travelling to Mexico, where the virus was thought to have originated. Many multinational companies cancelled business trips to destinations the world over, recognizing that international air travel can enable a virus to defy geographical barriers and spread.

The possibility exists, however to screen air travellers at a common indoor entry or exit point in an airport and take necessary action to prevent further spreading of the virus. The IEC was quick to standardize procedure in this respect. In October 2008 it produced International Standard IEC 80601-2-59, *Medical electrical equipment - Part 2-59: Particular requirements for the basic safety and essential performance of screening thermographs for human febrile temperature screening*.

The method uses infrared technology to detect the level of naturally emitted heat on the skin surface. By scanning the face of a passenger, it is relatively easy to detect a raised body temperature and gain a strong indication of fever.

When used effectively in airports and other locations with high public traffic such as the entrances to hospitals, workplaces, schools, government buildings, and train stations, screening thermographs can alert officials to the risk of a virus’s spread, allowing them to take appropriate measures such as closing schools or quarantining suspected cases. Thermographs can also be used to define the geographical boundaries of an outbreak.

The International Standard was developed by a

pluridisciplinary Joint Working Group (JWG) of IEC Subcommittee (SC) 62D, *Electromedical equipment*, and International Organization for Standardization (ISO) Technical Committee (TC) 121: *Anaesthetic and respiratory equipment*, SC 3: *Lung ventilators and related equipment*.

For two crucial months during the Severe Acute Respiratory Syndrome (SARS) epidemic of 2003, China used the infrared method to check approximately 30 million travellers. Of these, 9,292 were detected as having a raised temperature, and 21 of the 38 suspected of being SARS carriers were diagnosed with the virus.

Following the IEC standard, a joint team from IEC SC 62D and ISO TC 121/SC 3 developed ISO/Technical Report (TR) 13154, *Medical electrical equipment - Deployment, implementation and operational guidelines for identifying febrile humans using a screening thermograph*, which was published in early April 2009. This TR provides general guidelines on indoor thermographic screening of people to prevent the spread of infection. It was derived in part from Technical Reference 15 of the Standards, Productivity and Innovation Board (SPRING) – the IEC National

Committee of Singapore – which was created as a result of that country’s experience during the SARS epidemic.

ISO TR 13154 states: “Well-coordinated international implementation of entry and exit restrictions is an important component of an effective global response to contain cases and prevent a pandemic. The prime objectives of pandemic planning are to save lives, reduce the health impact, and minimize disruption to health and other essential services, while maintaining business continuity as far as is possible and reducing the general disruption to society that is likely to ensue.” ■



## LATEST FROM THE IEC

## COPANT Assembly Workshops Focus on Important Advancement Strategies for the Americas

The 2009 General Assembly of the Pan American Standards Commission (COPANT) met May 10–14 in Santo Domingo, Dominican Republic, bringing together representatives of standards and conformity assessment communities from North, Central, and South America. The IEC was represented by president Jacques Régis and by Amaury Santos, regional manager of the IEC Latin American Regional Centre (IEC-LARC) in São Paulo, Brazil. The annual Assembly provides a forum to advance standardization activities in the America.

In conjunction with the Assembly, on Monday, May 11, the Forum of IEC National Committees of the Americas (FINCA) hosted a workshop to discuss two important and timely issues directly affecting the standards bodies of the Americas. USNC president James E. Matthews III moderated a discussion on regional communication, training, and capacity building with presentations by Amaury Santos of the IEC Office in Brazil, Luis Hernandez of ANCE Mexico, Keith Rodel, president of the Canadian National Committee/IEC, and Maria del Rosario Uria Toro from INDECOPI Peru. Mario Wittner of the Argentinean National Committee moderated the second session highlighting IEC conformity assessment schemes. Joan Sterling, director of government relations at Intertek, and Rafael Nava, vice president of the Mexican National Committee/IEC, led discussions on how COPANT members can advance their economies by participating in the assessment schemes.

On Tuesday, May 12, interested stakeholders gathered for a workshop on technical standards, energy efficiency, and renewable energy. Presentations by IEC president Jacques Régis, ISO Secretary General Rob Steele, Jim Olshefsky of ASTM International, Gene Eckhart of

NEMA and chair of the ANSI Regional Standing Committee for the Americas (RSC-A), and others addressed the use of standards and conformity assessment to improve energy efficiency.

The Americas hold tremendous development potential in the International Standards community. During the workshop discussions it was reported that Chile would likely become a full member of IEC by year's end. To date, five of the region's countries are full IEC Members – Argentina, Brazil, Canada, Mexico, and the U.S. – and two – Colombia and Cuba – are Associate Members. There are also 24 Affiliate countries:

- |                       |                                    |
|-----------------------|------------------------------------|
| ■ Antigua and Barbuda | ■ Haiti                            |
| ■ Barbados            | ■ Honduras                         |
| ■ Belize              | ■ Jamaica                          |
| ■ Bolivia             | ■ Panama                           |
| ■ Costa Rica          | ■ Paraguay                         |
| ■ Dominica            | ■ Peru                             |
| ■ Dominican Republic  | ■ Saint Lucia                      |
| ■ Ecuador             | ■ Saint Vincent and the Grenadines |
| ■ El Salvador         | ■ Suriname                         |
| ■ Grenada             | ■ Trinidad and Tobago              |
| ■ Guatemala           | ■ Uruguay                          |
| ■ Guyana              | ■ Venezuela                        |

The IEC community is dedicated to encouraging increased participation from all countries by continuing to communicate the benefits of membership through a national electrotechnical committee, helping to guide the interested parties in establishing one, and fostering each country's participation in standards development.

### Further information

For more details on the IEC Affiliate Country Programme, visit the [IEC website](#). ■



## USNC NEWS

## The USNC Says Goodbye to Lou Costrell

The USNC mourns the loss of Louis Costrell, a leader in the standardization of nuclear instrumentation. Mr. Costrell died on June 8, 2009.



A founder of IEC Technical Committee (TC) 45, *Nuclear instrumentation*, Mr. Costrell was a powerful force in the early development of International Standards for nuclear instrumentation. He was the chief U.S. delegate to IEC/TC 45 for thirty-seven years, from the committee's inception in 1964, and chaired Working Group (WG) 9, *Detectors and systems*. He also served as technical advisor to the USNC's TC 45 and actively participated until the age of 94.

In addition to his work with the IEC, Mr. Costrell was a founder of the ANSI Accredited Standards Committee (ASC), N42, *Nuclear Instrumentation*, and an active participant on ASC N13, *Radiation Protection*. He was also a member of the American National Standards Institute (ANSI) Nuclear Standards Board (NSB) and the American Physical Society.

Mr. Costrell worked as an engineer in the U.S. Navy Department Bureau of Ships until 1946, when he joined the U.S. Department of Commerce National Bureau of Standards (now the National Institute of Standards and Technology [NIST]). In 1964 he initiated the development of the Bureau's Nuclear Instrument Module (NIM) system, which has had a tremendous worldwide impact in all markets – from medicine to security – for which such instrumentation is crucial for health, safety, and protection. He retired in 1982, and had since been employed by NIST as a rehired annuitant.

Mr. Costrell will be remembered as a mentor to young experts in the development of IEC standards, with unparalleled leadership and technical knowledge, and tireless energy to support the community. ■

USNC NEWS

## USNC Welcomes New Deputy General Secretary

The USNC has added a new member to its team: Tony Zertuche has accepted the position of deputy general secretary, USNC/IEC, the role recently vacated by Rafael Lourenço.



Mr. Zertuche jumped right into his new position on May 11 at the 2009 Pan American Standards Commission (COPANT) meeting in Santo Domingo, Dominican Republic. Having joined ANSI in March 2007 to work on the International Organization for Standardization (ISO) side of the aisle, Mr. Zertuche is no stranger to standards. He brings with him solid knowledge of the ISO-IEC Directives and the complex international standards arena.

Mr. Zertuche's first priorities will be providing staff support to the USNC's Communications and Continuing Education Committee and the Planning Committee for the IEC General Meeting in Seattle in 2010. His fluency in Spanish will be heavily utilized as the USNC pursues its goals in the Americas, and his basic knowledge of Japanese will help to cement the USNC's very strong working relationship with the Japanese National Committee of IEC.

In the near future he will be assigned staff responsibility for the USNC Technical Management Committee and will be named the USNC Alternate Representative to the IEC Standardization Management Board.

"I am very excited about this new phase in my career. I was warned about coming over to the 'dark side' of IEC from some of my ISO colleagues," Zertuche joked. "However, now that I'm here, I see that I'm surrounded by some of the very brightest people in the standards world."

The USNC is very happy to welcome Mr. Zertuche to the USNC/IEC and wishes him well in his new assignment. ■

USNC NEWS

## International Collaboration Makes Great Progress at ACOS Safety Workshop in Milan

On May 18 – 19, 2009, the IEC Advisory Committee on Safety (ACOS) held its ninth international workshop on the use of safety standards in a regulatory environment in Milan, Italy, coinciding with the 100th anniversary celebrations of the Italian National Committee.

USNC members Albert P. Brazauskis of Technical Committee (TC) 108 and Larry Farr of Subcommittee (SC) 17A were among some 100 workshop participants from 15 countries. The workshop, *Risk assessment in IEC safety standardization work supporting regulations*, organized in response to Goal 1 of the IEC Masterplan 2006 which seeks closer cooperation between IEC standardizers, reached the following conclusions:

### Risk assessment is in use

It was shown that risk assessment for low-voltage (LV) equipment is already widely used for many purposes by test houses, market inspectors, authorities for safety regulations, etc., in China, the European Union, Japan, the United States, and other regions. It was also stated that the use of a risk assessment guide for LV equipment in the IEC would be beneficial for achieving harmonization and, in the long term, possibly for the harmonization of the working methods among different authorities.

### Requirements must be consistent

Technical requirements for a product and the requirements for its conformity assessment (CA) need to be consistent. Risk management in technical product safety considerations and CA procedures should be aligned and adapted to regulatory requirements. For instance, the ISO/IEC Draft International Standard 31010, *Risk Management – Risk Assessment Techniques*, should be aligned with ISO/IEC Guide 51, *Safety aspects – Guidelines for their inclusion in standards*.

### Political authorities have a shared duty

Market monitoring and assessment of accidents are not only the duty of manufacturers but also of governments in order to allow for feedback to the IEC. Market surveillance by authorities is also necessary.

### Increased transparency of consistent international risk assessment is needed

Implementation of IEC International Standards at a national level is highly desirable. Consistent approaches for risk assessment and risk reduction among countries improve transparency and are necessary.

### Inclusion of standards in regulation sought

Regulation should indicate how standards can be helpful to fulfill legal requirements, such as in the New Approach in the European Union, and which additional measures are necessary in order to reflect the state of the art.

### Consistent legal framework is required

The legal framework in different areas of technical products differs significantly – for example, LV equipment versus medical products. There should be a common approach to systematic risk assessment and risk reduction of LV equipment of whatever type. Basic IEC Safety Publications and Group Safety Publications and some of the IEC Horizontal Standards can be used effectively to meet this objective.

### Training is key

The breakout sessions of the ACOS workshop specific to individual devices showed that implementing standardization is relatively easy provided that the experts involved have received sufficient training.

### Further information

For more details on the ACOS workshop, [click here](#). ■





## USNC NEWS

## USNC Members Receive IEC 1906 Awards for 2009

The IEC 1906 Award for 2009 has been conferred on 23 USNC experts who have contributed in an exceptional way to the technical work of the IEC.

The aim of this award is to recognize current achievements that can be considered a major contribution to furthering the interest of electrotechnology standardization and related

activities. Specifically, the award is granted for recent exceptional contribution to work related to the development – either technical or from an organizational point of view – of a specific work project. The USNC proudly congratulates the esteemed winners.



## IEC 1906 Award Winners for 2009

**Malcolm Allison**  
Ferraz Shawmut Inc.  
IEC TC 32

**James E. Armes**  
Eaton Electrical (Retired)  
IEC TC 22

**John N. Balough**  
TTI Floorcare North America  
IEC TC 59

**Don Barta**  
Rea Magnet Wire Company  
IEC TC 55

**Jay Britton**  
AREVA  
IEC TC 57

**C.P. (Sandy) Butterfield**  
National Renewable Energy Laboratory  
IEC TC 88

**Stephen Chalmers**  
PowerMark, Inc. (Retired)  
IEC TC 82

**Lynn W. Craig**  
IEC TC 65

**Jon Fairhurst**  
Sharp Laboratories of America  
IEC TC 100

**Kenneth E. Gettman**  
NEMA  
IEC TC 64

**Charles Gutentag**  
Tempo Electronics  
IEC TC 40

**Robert J. Kretschmann**  
Rockwell Automation  
IEC TC 65

**Richard H. Lalumondier**  
NEMA  
IEC TC 111

**Evans Massey**  
Baldor Electric Company  
IEC TC 31

**James E. Matthews III**  
Corning Incorporated  
IEC TC 110

**Jack McCullen**  
Intel Corp.  
IEC TC 47

**Brian McNiff**  
McNiff Light Industry  
IEC TC 88

**Randy Pohl**  
Rockwell Automation  
IEC TC 94

**Edward L. Quinn**  
Longenecker and Associates  
IEC TC 45

**Atul Srivastava**  
One Terabit  
IEC TC 86

**Antony Surtees**  
IEC TC 37

**Robert Wichert**  
Fuelcells  
IEC TC 105

**John H. Wohlgenuth**  
BP Solar  
IEC TC 82

## SAVE THE DATES

Save the Dates for  
Upcoming Events of Interest

## SEPTEMBER 2009

USNC Technical  
Management  
Committee

Tuesday, September 1  
Arlington, VA

## USNC Council

Wednesday, September 2  
Arlington, VA

## USNC TAG Leadership Workshop

Thursday, September 3  
Arlington, VA

## OCTOBER 2009

## World Standards Week

Monday – Thursday, October 5 – 8  
Bethesda, MD

## 73rd IEC General Meeting

Sunday – Friday, October 18 – 23  
Tel Aviv, Israel

October 18

**Standardization  
Management Board (SMB)**

October 19

**Conformity Assessment  
Board (CAB)**

October 20

**Council Board (CB)**

October 22

**Council**

## 2010

## Standardization Management Board (SMB)

Wednesday, February 10, 2010  
Geneva, Switzerland

## Standardization Management Board (SMB)

Tuesday, June 8, 2010  
Geneva, Switzerland

## 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**

For a complete schedule of upcoming meetings, or for more information on the events listed above, visit [www.ansi.org/calendar](http://www.ansi.org/calendar).

Enter either "USNC" or "IEC" in the key word search field to narrow the list of results.

CONFORMITY ASSESSMENT

## IECEX Approves First Conformity Mark License

**V**aisala Oyj, an industrial measurement company in Finland, has received the first IECEx Conformity Mark License (Ex Mark) for humidity and temperature transmitters for hazardous environments. The Ex Mark was granted by VTT, a Finland-based applied research organization that provides high-end technology solutions and innovation services, including IECEx certification.

The Ex Mark, launched in 2008 by the IEC System for Certification to Standards Relating to Equipment for use in Explosive Atmospheres (IECEX), is issued by approved IECEx certifiers (ExCBs) for equipment covered by an IECEx Certificate of Conformity, which assures that equipment has been tested and manufactured under systems that receive ongoing surveillance by ExCBs. Once granted an Ex mark, a company can use it on all equipment covered by an IECEx Certificate of Conformity. IECEx certification is adequate proof of Ex-protection in every country participating in the system and guarantees that the equipment has access to the market without additional tests.

The Vaisala Oyj equipment that received the IECEx Certificate of Conformity was the Humidity and Temperature Transmitters Series HMT360, used in the pharmaceutical, chemical, petrochemical, and other industries where humidity and temperature measurements are essential to guarantee a safe environment. While the HMT360 equipment is already covered by the European ATEX and five other national approvals, obtaining the EX Mark license for the HMT360 transmitters and the visibility it provides is key for Vaisala Oyj to market the product globally. ■



CONFORMITY ASSESSMENT

## China Hosts IECQ Annual Meetings

**A**t the invitation of the China Electronic Product Reliability and Environmental Testing Research Institute (CEPREI) and the Certification and Accreditation Administration of the People's Republic of China (CNCA), the IEC Quality Assessment System for Electronic Components (IECQ) held its 2009 meetings on May 11–15 in Guangzhou, China. For the first time, the IECQ Certification Body (CB) Training Workshop was held in conjunction with the regular annual committee meetings, and was extremely well attended and positively received.

IEC vice president Hiromichi Fujisawa, who began his term as chairman of the Conformity Assessment Board (CAB) on January 1, 2009, was present at the Management Committee (MC) and Working Group (WG) 4 meetings.

The IECQ MC adopted a new five-year Strategy Document complementing the IECQ Business Plan. As part of this new strategy, it was agreed to allow potential new member countries to attend IECQ MC meetings as observers, without payment of dues, for up to two consecutive years.

The structural revision of the IECQ program documentation is underway and will eventually replace the complete QC 001002 series of documents. The objective is to update references to and compliance with ISO/IEC Standards and Guides, to simplify the terminology used in the documentation, to assure consistency among the IECQ Schemes, and to include references to the On-Line Certification System. The following drafts were approved during the meeting: IECQ 04, *Rules and procedures for ECMP (Electronic Component Management Plan)*; and IECQ 05, *Rules and procedures for HSPM (Hazardous Substances Process Management)*.



The issue of training programs was also discussed. While IECQ does not provide training itself, it recognizes the benefits to be gained from having a single training system for all its partners, including certification bodies and industry. IECQ MC considered a proposal to recognize independently qualified training programs for its stakeholders.

The 2009 series of meetings saw the inaugural meeting of the Business Development and Marketing Subcommittee (SC 01). The Subcommittee noted the work carried out to increase awareness of the IECQ

System on the market. The proposal to have future SC 01 meetings broken down into two separate parts, with the first open to observers and the second for members only, met with IECQ MC approval. A second proposal, to make greater use of electronic

communication means, was also approved.

The achievements of the past year were praised, including:

- The new look and improvement of the IECQ website
- The overhaul of the On-Line Certificate System and review of IECQ Certificate templates
- The introduction of IEC e-tech articles on IECQ each month and library of past articles on the IECQ website
- IECQ officers' participation in major events
- The communication work carried out by the Electronics Component Certification Board (ECCB), United States National Authorized Institute (US-NAI), resulting in articles and videos in Quality Digest

### Further information

Visit the IECQ website, [www.iecq.org](http://www.iecq.org). ■

## ITEM OF GENERAL INTEREST

## United States to Host IEC 2010 General Meeting in Seattle, Washington



The United States is hosting the General Meeting of the International Electrotechnical Commission for only the sixth time since 1904. The

events will be held in Seattle, Washington, during the period of October 6–15, 2010.

More than 1,500 delegates and 750 accompanying persons from around the globe are expected to attend. Pending sponsor support, more than seventy IEC Technical Committees and Subcommittees will be invited to the event.

Sponsorship opportunities are still available for **IEC 2010**. To learn more, visit [www.ansi.org/usnc](http://www.ansi.org/usnc).



## General Sponsors by Category as of July 2009

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other items that may be of interest to members of the electrotechnical community.

**HOW TO CONTRIBUTE**

Submit proposed news items to Tony Zertuche, USNC/IEC Dupty General Secretary, American National Standards Institute.  
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