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## MAJOR UPDATES IN THE USNC AND IEC

### FEATURED STORIES



Reflections on the IEC Young Professionals' Programme



Excerpts from ARESKA's White Paper on Conformity Assessment in Wind Energy



Call to Action and Participation in Standards!



Awards Season

### IN THIS ISSUE

**3** USNC Holds Young and Emerging Professionals Roundtable

**4** New IEC and USNC Leadership

**9** Decision Depot

**9** Upcoming Events

**10** USNC Holiday Greeting

**11** USNC 2022 General Meeting: Save the Date



United States  
National Committee  
of the IEC



## Reflections on the IEC Young Professionals' Programme

by Carrie Schmaus, ORISE Science, Technology, and Policy Fellow at U.S. Department of Energy (DOE)



When I first learned about the IEC Young Professionals' Programme, I was on the University of Washington campus observing a TC 114 meeting. I was one

month into my new fellowship at the Department of Energy, and on the suggestion of my supervisor, was attending all the meetings that seemed interesting so I could determine how I wanted to spend my time as a fellow. Standards and conformity assessment are not typically greeted with enthusiasm by the general public, or probably considered much at all, but something about creating standards for a nascent industry like marine renewable energy piqued my interest. So, I found myself at the TC 114 Plenary meeting, sitting behind a table topper that said "United States," jotting down all the acronyms I didn't yet understand. The chair of TC 114, Jonathan Colby, gave a presentation where he mentioned the IEC Young Professionals' Programme and indicated it was useful for someone new to standards if they wanted to learn more, so after the meeting, I asked if he could sit down with me and tell me more about his experience in the program.

Now, as I have just returned from China, where I attended the second IEC Young Professionals' Programme as a returning 2018 YP leader, it is funny to think that two years ago I didn't even really know what standards were. It is especially funny because my involvement with the IEC and the U.S. National Committee has had such a profound influence on my personal development, career, and worldview.



Attending the YP program for the first time is a whirlwind, especially being a complete novice to the world of standards. As I arrived in Busan, Korea in 2018, I was shocked to find how many industries, countries, and economies depend on standards, especially since so much of my adult life has been spent in complete ignorance. However, my inexperience wasn't a problem; I left the YP program with a working understanding of the IEC, challenges that the organization faces, and most importantly, ideas for opportunities to improve. I also left the program as a YP leader, an elected position that meant I was granted a full year to consider how to expand the reach of the program


before I could return to China the following year to help facilitate the new cohort of YPs through the program.

During this year, I gave presentations to my office at the Department of Energy and TC 114 about my experience, worked with the two other YP leaders on our projects, and collaborated with the U.S. National Committee to reach my goal for the year, which was to expand the diversity and participation in the YP program from the United States. At the YP program this year, I facilitated sessions, met the incoming cohort of leaders, and passed the baton to a new group of 2019 YP leaders. I also attended the bilateral meetings with the United States National

Committee, where over and over again, we heard the importance of the young professionals for succession planning and staying relevant in an ever-digitizing world. Following the meeting, I even led a session about the possibility of creating a national program here in the U.S., and it was only when I felt confident speaking in front of a group of people that I respect that I realized how far I had come, professionally and personally, due to my involvement in the IEC.

Not only has thinking about standards given me insights to my work at the

Department of Energy, it's helped me develop soft skills that have been invaluable across my personal and professional life. Thinking strategically about how the standards writing process will evolve with the digitization of work has helped me think through potential development pathways for marine renewable energy. Making friends with young professionals from across the world has driven home the value of a diverse group of opinions for any successful project, and taught me about places that I haven't visited (yet!). Working

with the U.S. National Committee to expand young professional involvement in the U.S. has given me new ways to think about outreach and engagement for initiatives at the DOE. And, most surprisingly, my involvement with standards also gave me the opportunity to give my very first award acceptance speech! My tenure as YP leader might be over, but my involvement with standards and conformity assessment is just beginning—how funny to think that it's all because I decided to attend a technical committee meeting. 

## USNC HOLDS YOUNG AND EMERGING PROFESSIONALS ROUNDTABLE



In conjunction with World Standards Week, the USNC hosted a Young and Emerging Professionals (YEP) roundtable event in Washington, DC on November 8, 2019. Jan-Henrik Tiedemann, Head of IEC Academy & Capacity Building in the IEC Central Office in Geneva, presented on the IEC "Standard in a Day" and discussed IEC training and learning culture. We also engaged in a dynamic discussion on laying the foundation for a national young/new professionals standards and conformity assessment program in the United States. As we saw at the IEC General Meeting in Shanghai, there is a lot of enthusiasm surrounding the young professionals programs around the world. We are excited to continue the USNC YEP program's momentum in 2020!

## New IEC and USNC Leadership



### New IEC CEO

Council appointed Mr. Philippe Metzger as the future General Secretary and CEO of IEC as of February 1, 2020 in succession to Mr. Frans Vreeswijk. Outgoing IEC President, Mr. James Shannon noted that Mr. Metzger has had an outstanding career in the public and private sectors with a particular focus on public policy questions dealing with technology. He is currently the Director General of the Swiss Federal Office of Communications (OFCOM). Mr. Metzger's previous positions include service at the International Telecommunication Union, the European Free Trade Association, and Cisco Systems. Join us in welcoming our new IEC General Secretary and CEO!



### New IEC President

Dr. Yinbiao Shu became IEC President on 1 January, 2020. Prior to that, Dr. Shu served as Convener of the Market Strategy Board (MSB) from June 2012 until the end of 2018 and IEC Vice-President from 2013 to 2018 with the specific responsibility of leading both the MSB membership renewal and its technology-watch effort. At present, he is Chairman of the China Huaneng Group and is also a senior member of IEEE.

Congratulations and best wishes to Dr. Shu as the new IEC President!



### New USNC Vice President for Conformity Assessment

Ms. Joan Sterling has been elected to serve as the USNC Vice President for Conformity Assessment for the term 2020-2022. In this role, Ms. Sterling will also serve as the USNC Member on the IEC Conformity Assessment Board. The USNC looks forward to continuing our success under the leadership of our new USNC Vice President for Conformity Assessment!

Mr. Timothy Duffy's term as USNC Vice President for Conformity Assessment will end at culmination of 2019. We thank Mr. Duffy for his time and dedication to Conformity Assessment in the USNC and IEC.

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## Excerpts from ARESCA's White Paper on Conformity Assessment in Wind Energy

The rapid pace of renewable development and deployment worldwide is astounding. Our grid is rapidly transforming from traditional carbon-fueled electrical generation to clean carbon-free renewable energy. Global serial manufacturing, production, and modular deployment of renewable equipment requires both global standards and a unified conformity assessment system. The IEC suite of standards is the globally accepted standard for the design, manufacture, siting, and construction of renewable energy projects. Now there is a conformity assessment system under the authority of the IEC—known as IECRE—that provides a unified, globally accepted certification for renewable energy equipment and projects. Manufacturers are encouraged to utilize IECRE certifications to enhance global sales. Owners are encouraged to request IECRE certifications when purchasing renewable energy equipment for added confidence. Governmental agencies are encouraged to adopt IECRE certifications, as a requirement for renewable energy projects, to ensure the projects are built to IEC international standards. Insurers and financiers are encouraged to require IECRE certification as a cost-effective means to prove that risk mitigation is in place.

### Development of the Renewable and Wind Industry

At the beginning of the modern wind power industry, wind turbine generators (WTG) were small and were designed using basic machine design assumptions, factor of safeties, and available subcomponents produced and derived from other industries (e.g. aerospace, automotive and industrial). There were significant

gaps in the understanding of aero elastic and other dynamic loadings, such as the impact of geography and terrain on the wind flow or grid system interactions. The companies that manufactured the wind turbines performed only cursory testing and self-assessment (first party) of the finished product. Owners looked at the small electric capacity compared to other power equipment and felt the wind turbines were low risk exposure. Although some of these early units are still in operation, many suffered reliability problems, failures, and energy production well below expected. It became apparent that standards for design and manufacture were required.

Although some countries started their own standards efforts earlier (e.g., U.S., Denmark, Netherlands, UK), the development of converged international wind energy standards began in 1988 under the IEC. Once standards started to be developed, the self-assessment approach was commonplace. As larger projects were developed, due diligence in service to financial risk assessment become more widely used, with independent engineers hired to

assess the products and services. Due diligence is not as rigorous as third-party conformity assessment and was based on the independent engineer's experience and not the standards. Many times, multiple parties would hire an engineer to provide due diligence for the same project (i.e., developer, owner, financier, insurer, local regulatory jurisdiction). Multiple redundant due diligence efforts proved to be a costly approach with marginal added value, not leading to better outcomes. Despite multilevel scrutiny, the wind industry continues to struggle with availability and reliability issues leading to some projects underperforming.

As the technical complexity, the size of equipment, and the size of projects expanded, the need for a consistent and transparent conformity assessment system became apparent. In 2010 the IEC issued the IEC 61400-22 standard to provide a framework for WTG systems conformity assessment and testing. With the establishment of IECRE and its Operational Documents (ODs), this document was withdrawn in 2018.<sup>1</sup> Initially, third-party conformity assessment was provided



to this standard by certification bodies using their own conformity procedures, and rules—normally to fill in gaps in the standards and align to common structural design review from other industries (e.g. ships, buildings, etc.). This was awkward and lacked transparency as each certification body would employ their own interpretation of conformity assessment requirements, and there was no mutual recognition between certification bodies and test labs. Although the wind industry benefited from this movement to third-party conformity assessment, with increasingly reliable products and performance, there were still many projects that did not meet expectations, and failures continued to occur. There are some observations of this period that need to be noted:

- » The power rating of wind turbines increased at a rapid pace.
- » The tower height increased at a rapid pace.
- » The size of projects increased significantly.
- » Most wind farms did not achieve predicted annual energy production (AEP).
- » Operations, maintenance, and repair costs exceeded expectation.
- » Energy pricing became more competitive, and per MW energy prices dropped, putting margin pressures on projects.
- » Wind turbines became more efficient at lower wind speeds, hence the geographic spread of projects increased.

- » Significant increase of power purchase contract diversity, institutional and corporate.

A recent article on project insurance highlighted higher loss experience with wind turbines that were not subjected to third-party conformity assessment or certification.

*“Design issues in some uncertified models are resulting in equipment failure. While this issue may be resolved over time, both wind and solar projects remain vulnerable to mechanical and electrical breakdown in this period of continued technical innovation in the sector, the insurer said.”<sup>2</sup>*

As development continued in renewable energy with many manufacturers and projects around the globe, it was increasingly clear that a single globally harmonized third-party conformity assessment system was required to foster further industry acceptance, and growth.

In response to this, wind industry stakeholders worked with the IEC to organize a renewable energy conformity assessment system within the IEC organizational structure.

## Path Forward

Having one internationally recognized set of standards for wind power industry equipment and projects, along with coordinated conformity assessment testing is extremely valuable for the U.S. and global renewable energy transformation. Whether U.S. manufacturers are exporting equipment overseas or U.S. owners/operators are purchasing equipment from an overseas manufacturer, conformity assessment

offered by IECRE will increase confidence and decrease costs.

However, the implementation and use of these valuable certifications needs to be expanded. The path forward to expand implementation and increase the use of IECRE conformity assessment requires a wider awareness and knowledge of IECRE certifications, as well as the specified requirement that wind energy equipment and projects be certified within the IECRE system. There are several ways that conformity assessment of wind energy equipment and projects can be widely implemented (listed in order of effectiveness of implementation):

- » Government legislated or regulatory agency requirement
- » Financial institutions and insurance carrier’s requirement
- » Manufacturers adopt a common standard for design, manufacture, and conformity assessment
- » Individual purchaser specification of equipment to a standard, and verified via a conformity assessment system

Future IECRE conformity assessment products are in discussion for development. IECRE will develop products where there is a need to demonstrate specific performance or an important aspect of compliance. This would include grid interconnection and electrical system performance; project resource assessment and energy yield; project design for specific terrain, and geography; biological impact assessment and mitigation; and noise performance.

For the entire whitepaper, [click here!](#) 

1 IEC 61400-22 Withdrawal letter Administrative circular AC/18/2018 31 August 2018 <https://www.iecre.org/certification/iecstandards/pdf/AC19-2018.pdf>

2 “Newsdesk article”, Insurance Journal 4/4/19 “Why Insurance Claims in Renewable Energy Industry Are Rising” <https://www.insurancejournal.com/news/national/2019/04/04/522873.htm>

## Call for Action and Participation in Standards!

USNC participants and TAG Administrator needed for:

### **USNC TAG to IEC SyC Communication Technologies & Architectures**

#### **Scope:**

- » Facilitate and advise in the domain of communication technologies and architectures to advance and harmonize communication technology related activities in the IEC according to clause 2 in AC/22/2017.
- » Facilitate outreach and influence the work on communication technologies and architectures with other SDOs and industry consortia, in collaboration with SG 13.

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TAG Administrator needed for:

### **USNC TAG to IEC TC 8 – System Aspects of Electrical Energy Supply**

#### **Scope:**

To prepare and coordinate, in co-operation with other TC/SCs, the development of international standards and other deliverables with emphasis on overall system aspects of electricity supply systems and acceptable balance between cost and quality for the users of electrical energy. Electricity supply system encompasses transmission and distribution networks, generators and loads with their network interfaces. This scope includes, but is not limited to, standardization in the field of:

- » Terminology for the electricity supply sector



- » Characteristics of electricity supplied by public networks
- » Network management from a system perspective
- » Connection of network users (generators and loads) and grid integration
- » Design and management of de-centralized electricity supply systems, e.g. microgrids, systems for rural electrification

While relying on efficient and secure data communication and

exchange, TC 8's scope does not include standards for communication with appliances and equipment connected to the electric grid or for communication infrastructure serving the electric grid. TC 8 is responsible for the maintenance of basic publications (horizontal standards) on standard voltages, currents, and frequencies, ensuring the consistency of the IEC publications in these fields. TC 8 cooperates also with several organizations active in the field of electricity supply such as CIGRE, CIRED, IEEE, AFSEC, IEA.

If you are interested in participating in the above please contact Adelana Gladstein ([agladstein@ansi.org](mailto:agladstein@ansi.org)) as soon as possible!

## Awards Season

The USNC is pleased to announce that we have won over 27 1906 Awards during this 2019 season. The 1906 Award was created in 2004 by the IEC Executive Committee (ExCo). It commemorates the IEC's year of foundation and honors IEC experts around the world whose work is fundamental to the IEC. The Award also recognizes exceptional and recent achievement—a project or other specific contribution—related to the activities of the IEC and which contributes in a significant way to advancing the work of the Commission. Experts are nominated for IEC 1906 Awards by their co-workers in IEC Committees and working groups. For a full list of winners from the U.S. please see below.

### 1906 Awards

Winner	Nominating Group
Larry Albert	TC 61
Rolf Bienert	PC 118
Daniel Delaney	IECEE
Wallace Ebner	IECRE
Rob Friedman	TC 111
Seymour Goldstein	TC 86
Jeffrey Hall	IECEE
Fred Heismann	TC 86
David Holmberg	PC 118
Becky Iverson	TC 57
John William Jaeckle	TC 62
Mark Klerer	TC 69
C.S. Lam	TC 49
Yan Lu	TC 65
Philip Maness	TC 100
Frank O'Brien	TC 62
Patricia Owens	TC 76
Gowri Rajappan	TC 57
Narayanan Ramachandran	TC 91
Lars Samuelsson	TC 88
Charlie Smith	TC 8
Jim Spitaels	TC 22
Angela E. Summers	TC 65
Emil David Tietje	TC 144
William Travis	TC 32
Mathieu Van Den Bergh	TC 77
Roger Wicks	TC 112

### ANSI Awards

The ANSI awards cover a wide range of topics from leadership to expertise in electrotechnology to conformity assessment. Nominees are reviewed and selected by the USNC Nominations Committee and submitted to ANSI for consideration by the ANSI Awards Committee. The USNC is pleased to announce that we have won 11 ANSI awards during this 2019 award season. The full list of winners from the U.S. includes:

- » Wham Leadership Medal – Captain Scott Colburn (FDA)
- » Finegan Standards Medal - William Lawrence (FM Approvals)
- » Gerald H. Ritterbusch Conformity Assessment Medal - Paul Moliski (Intertek)
- » Thomson Electrotechnology Medal - Mark Earley (NFPA)
- » Edward Lohse Information Technology Medal - Phil Wennblom (Intel)
- » Next Generation Award - Carrie Schmaus (DoE)
- » Meritorious Service Award - Peter Pondillo (Corning), Hae Choe (AAMI), Robert Kretschmann (Rockwell Automation), Evans Massey (ABB Motors and Mechanical), Jonathan Colby (Verdant Power)





## DECISION DEPOT



This column provides easy access to recent decisions that have been made regarding IEC and USNC policies and procedures that directly affect our members. Click the links below to access the recent decisions.

See the Decision Lists below from the Council, CAB, and SMB meetings held during the IEC General Meeting in Shanghai, China, on October 2019.

**Council:** [C/2239/DL](#)

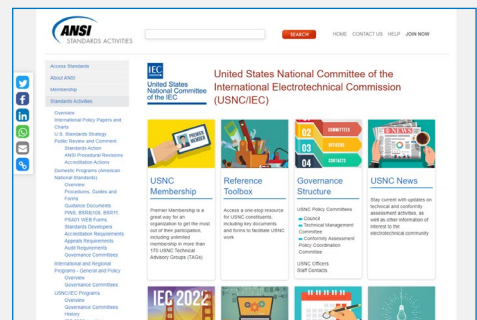
**CAB:** [CAB/1925/DL](#)

**SMB:** [SMB/6840/DL](#)

## SEE THE UPDATED USNC WEBSITE!

The USNC has a fresh and new look to our website!

Go to [www.ansi.org/usnc](http://www.ansi.org/usnc) and check it out.



## UPCOMING EVENTS

<b>January 14–16</b>	USNC Management Meetings Charlotte, NC (hosted by Corning, Inc.)	<b>September 25–27</b>	FINCA Lima, Peru (Canadian NC to host)
<b>April 26–30</b>	COPANT Meeting Rio de Janeiro, Brazil	<b>October 2020 5-9</b>	84 <sup>th</sup> IEC General Meeting Stockholm, Sweden
<b>May 5–7</b>	USNC Management Meetings Freemont, CA (hosted by UL)	<b>October 2020 19-23</b>	World Standards Week Washington, DC
<b>May 18–22</b>	APCF Meeting Vladivostok, Russia	<b>2021</b>	85 <sup>th</sup> IEC General Meeting Dubai, UAE
<b>June 1–2</b>	USNC/CROSQ Workshop in conjunction with the IECEE CMC Meeting Montego Bay, Jamaica	<b>2022</b>	86 <sup>th</sup> IEC General Meeting San Francisco, USA
<b>September 1–3</b>	USNC Management Meetings Norwood, MA (hosted by FM Approvals)	<b>2023</b>	87 <sup>th</sup> IEC General Meeting Egypt



The USNC would like to thank all of you for your commitment and support throughout 2019. As standardization and conformity assessment grow, we are excited for all of the new advancements, technology, and opportunities that the future will bring. We wish the entire USNC community a prosperous New Year.

Pictured from left to right: Cara Magoon, Tony Zertuche, Ade Gladstein, Kristen Palma, Debra Negron-Badillo, Scott Fogel

## USNC LINKEDIN



Would you like to stay updated with the news and events of the USNC? [Join our LinkedIn Group](#) to learn about and provide input on all issues electrotechnical that can affect your life, from your own home to the other side of the globe! If you have any information to share on LinkedIn, please contact Scott Fogel ([sfogel@ansi.org](mailto:sfogel@ansi.org)).

## Save the date!

IEC 2022 General Meeting, Host City: San Francisco

Sponsor the IEC 2022 General Meeting, hosted by the USNC

For only the seventh time since 1904, the United States is gearing up to host the IEC General Meeting, 31 October – 4 November, 2022, in San Francisco. Organizations with a stake in all areas of electrotechnology are invited to demonstrate their commitment to international standardization and conformity assessment through sponsorship of the 10-day event.

For more information, see the [IEC 2022 Sponsorship Brochure](#) or contact Adelana Gladstein at: [agladstein@ansi.org](mailto:agladstein@ansi.org) or 212-642-4965.



Thank you to the organizations already on board as IEC 2022 sponsors!



## ABOUT THIS PUBLICATION

The USNC Current newsletter is distributed to the constituency of the U.S. National Committee (USNC) of the International Electrotechnical Commission (IEC). It provides updates on technical activities and other information of interest to members of the electrotechnical community. Some articles are reprinted with permission from the IEC News log.

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### HOW TO CONTRIBUTE

Contributions are gladly accepted for review and possible publication, subject to revision by the editors. Submit proposed news items to: Scott Fogel, [sfogel@ansi.org](mailto:sfogel@ansi.org)