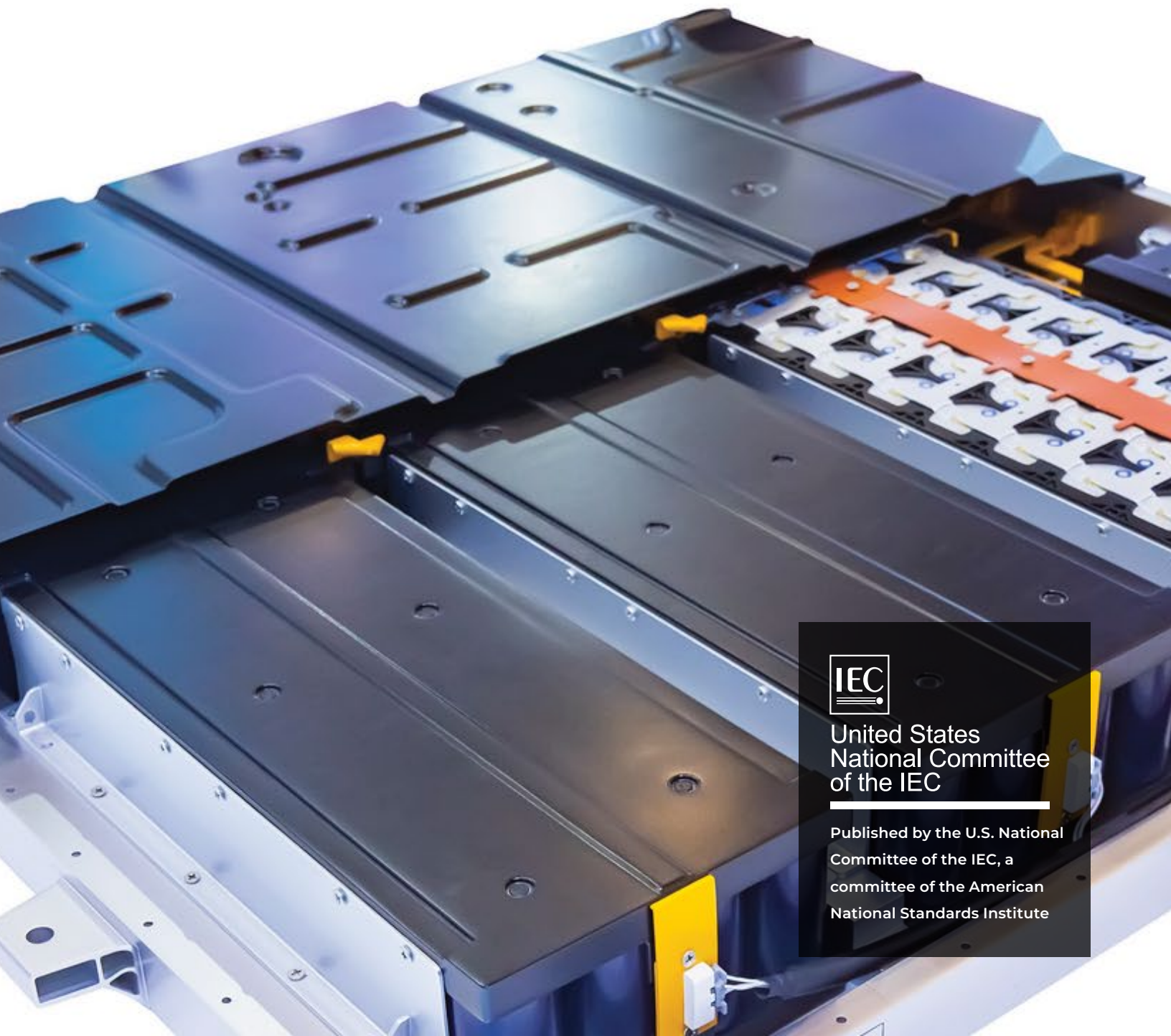


USNC CURRENT

Vol. 19, No. 2 - Summer 2024



BATTERIES



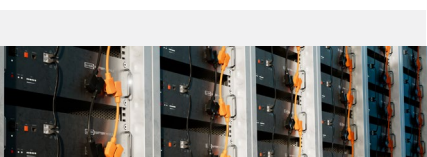

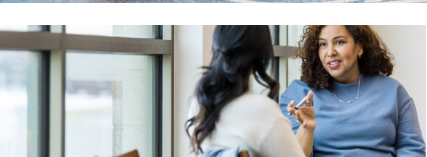
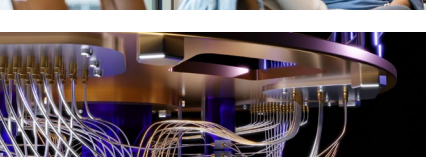


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FAREWELL, DEAR COLLEAGUES AND FRIENDS

Tony Zertuche, General Secretary, USNC/IEC; Sr. Director, International Policy, ANSI



It is with mixed emotions that I announce my resignation as General Secretary of the US National Committee effective July 1, 2024 in order to pursue a great opportunity with the Institute of Electrical and Electronics Engineers (IEEE). I began my career with ANSI in 2007 as a program administrator on the ANSI ISO Team (ISOT). In 2009 I moved to the USNC department where I served as a Program Manager and USNC Deputy General Secretary until 2015. As many of you know, Charlie Zegers retired at the end of 2015 and I took over as USNC General Secretary beginning in 2016 and have served in that capacity until now. For the majority of my 17 years at ANSI, I have proudly served as the primary point of contact between the USNC and the IEC central secretariat, representing ANSI/USNC on the IEC/SMB and in numerous other IEC leadership positions.

When I became the USNC General Secretary eight years ago, it became clear that the department was in dire need of a technology and process upgrade. Over the past eight years, I embarked on the transformation and growth of the USNC to a modern, more vibrant program and a well-balanced, productive and dynamic team.

One of the first goals I took on was to reinvigorate the USNC's membership activities. I converted the "sponsoring members" group into the current USNC's Premier Membership (PM) program. After holding steady at about 27 "sponsoring" members for more than a decade, the PM program has grown by 40%; today there are 38 USNC PMs. Some of the PMs I have personally brought on board include organizations like Qualcomm, Haier, Texas Instruments, Itron, ASTM, as well as others.

From the U.S. participation in the first IEC YP program (established in 2010), I launched the extremely successful USNC Young and Emerging Professionals Committee (YEP). The goal with the USNC YEPs is to ultimately create a true, national young/new professionals' program that would cover all aspects of standards and certification, not just the IEC. Many of the newcomers noted that they gained a better understanding of USNC/IEC structure and organization while the mentors praised the opportunity to help support our next generation of standard writers and leaders.



Additionally, the USNC team, along with ANSI IT, developed the new USNC webpages including the launch of our USNC Dashboard allowing members access to key national and international metrics. We also increased the USNC's presence on social media by initiating the USNC's LinkedIn page with growing membership. The department continues to hold a number of workshops and training events throughout the year, every year. These in-person and virtual sessions are provided for those new to the USNC, as well as our more seasoned standards professionals.

Internationally, I have consistently and enthusiastically taken on more strategic initiatives and leadership roles within the IEC. Starting in 2013, the USNC successfully mentored Costa Rica, Chile, Vietnam, CROSQ, and recently completed a year mentoring the Colombian National Committee. The USNC has gone from an independent mentor to one of the major participants in the IEC Country Mentoring Program. Since the major reorganization of the IEC's governance structure, I was proud to take on the inaugural lead role in two new international forums. I served as the first ever Chair of the IEC Forum which is the primary group for the Secretaries, Managers and lead administrators of all IEC National Committees to meet on issues of shared interest and to advise the IEC Board. In addition, I also completed two full terms as the Chair of the IEC Asia Pacific Cooperation Forum which is the formal assembly of IEC National Committees and IEC Affiliate Countries from the Asia-Pacific region. Both of these groups have been highly influential in the governance activities of the IEC.

All told, I have had a very fruitful and wonderful career at ANSI working for the USNC/IEC. I wish very much I could have delivered this news to all of you in person but schedules and travel prevented it. As we all know, the USNC is unlike any other ANSI program. For me, my colleagues, mentors, and members have all had a hand in my training and experience in standards and conformity assessment and I cannot thank you enough for that. But, perhaps more valuable than the mentoring, has been the friendships and fellowship I have acquired over the years. Leaving ANSI and the USNC was not an easy decision as I have come to view my coworkers and colleagues as family in many ways - dysfunctional at times! – but a family nonetheless. However, this new adventure I believe has come along at the right time for the next evolution in my career and I have all of you to thank for preparing me for this next challenge.

Hopefully I will see many of you again in my new role at IEEE as I would welcome the opportunity to work with you all in the future. For now, I will just bid you a fond farewell as I leave you in the great hands of my incredible USNC staff. It has been a pleasure and my honor to serve the USNC/IEC as your General Secretary and I'm proud of everything we have accomplished. Until we meet again, I bid you farewell and hope you keep building consensus! 🔄

Tony Zertuche

General Secretary, USNC/IEC

Sr. Director, International Policy, ANSI



LETTER FROM THE PRESIDENT

Veronica Lancaster – USNC President; Vice President, Standards Programs at Consumer Technology Association



I am delighted to be writing this letter to our global standards and conformity assessment community. This publication will address the importance of batteries and the many advancements in battery technology, which is being driven by the increasing demand for portable electronics, electric vehicles (EVs), and renewable energy storage solutions.

Battery technology plays a crucial role in rural communities and developing countries, even though they support different needs. In places where electricity grids are missing, battery technology provides a means to store energy from renewable sources, provides the backbone of off-grid solutions, and also provides options for mobility, emergency power, and energy independence. In developing countries, battery technology can be an essential asset, providing electricity for healthcare and educational facilities, vaccine refrigeration, and electrification in areas that previously did not have access. Energy access can address poverty simply through being available, making a significant difference in the lives of those in developing countries.

Given these advancements, it should be no surprise to learn that the IEC has several IEC technical committees working on international standards in this space.

- » **TC 4** publishes documents covering storage pumps used in pumped-storage hydro power plants.
- » **TC 21** publishes documents covering secondary cells and batteries, including for renewable, on-grid and off-grid energy storage.
- » **TC 40** publishes documents covering energy storage systems using electrodes and electrolytes (capacitors).
- » **TC 69** publishes documents for EVs, including the management of charging infrastructure.
- » **TC 105** publishes documents for fuel cell technologies.
- » **TC 120** publishes documents for electrical energy storage systems to support grid requirements (rather than energy storage). “Grid” in TC 120 includes applications in transmission grids, distribution grids, islanded grids, and customer installation.



In addition to standards work, it is important to recognize the role of conformity assessment in ensuring the safe functioning and interoperability of batteries. The IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE), covers testing and certification for safety and performance for a wide variety of home, office, and industrial applications, where battery-powered operations have become a part of everyday life. However, batteries contain chemical substances and electrical processes which could be hazardous if they malfunction. There are many causes of hazardous circumstances, such as cell short-circuits, defective separators, aggregation of materials, as well as the generation of gasses during overcharging and discharging. A variety of disorders could potentially lead to combustion and explosions. Such risk calls for care taken by manufacturers and regulators in ensuring that products meet requirements for product safety and reliability through conformity assessment testing.

Some notable advancements in battery technology include:

» Lithium-ion batteries remain the dominant technology in portable electronics and EVs due to their high energy density and relatively low weight. Advancements in electrode materials, such as the use of silicon anodes and high-capacity cathodes like NMC (nickel-manganese-cobalt) and NCA (nickel-cobalt-aluminum), have improved energy density and longevity. This is done by considering the relationship or operational voltage by increasing the material of particular cathodes, which can increase the overall energy density of the cell.¹ This is highly attractive for EVs in higher energy density can enable longer ranges.

1 Marie, J. & Gifford, S., September 2023, Developments in Lithium-Ion Battery Cathodes, Faraday Insights – Issue 18, The Faraday Institution. https://www.faraday.ac.uk/wp-content/uploads/2023/09/Faraday_Insights_18_FINAL.pdf

» Metal-air batteries, such as zinc-air and aluminum-air batteries, have attracted interest due to their high energy density and potential for long-range EVs. Various metals can be used as anodes, with each metal having advantages and disadvantages. These batteries use oxygen from the air as a reactant, reducing the need for heavy cathode materials. Aluminum is showing the most promise due to its high energy density, light weight, recyclability and sustainability, as well as low cost.²

» Flow batteries are a type of rechargeable battery where energy is stored in liquid electrolytes contained in external tanks, which helps solve the challenge of powering a reliable grid that can deliver power when energy sources such as solar or wind are not present. They offer scalability and long life cycles, making them suitable for grid-scale energy storage applications. An advantage of flow battery technology is that external tanks can be stored separately from electrochemical reactions, meaning that higher energy storage can be achieved through tanks with higher capacity. However, a drawback is how quickly electrolytes can degrade, suffering from crossover, resulting in lost capacity. Vanadium is an abundant element that is being studied because it doesn't degrade, and does not seem to cause permanent crossover contamination.³

With sustainability and energy efficiency being top of mind for many engineers, battery technology will continue to be of importance. I look forward to ongoing R&D efforts to continue pushing the boundaries of battery technology, aiming to achieve higher energy density, improved safety, longer lifespan, and lower costs, which will be crucial for the widespread adoption of EVs and renewable energy storage systems. Please

2 Olabi AG et al., Metal-Air Batteries—A Review. *Energies*. 2021; 14(21):7373. <https://doi.org/10.3390/en14217373>

3 Stauffer, N. April 7, 2023. Flow batteries for grid-scale energy storage. MIT News. Massachusetts Institute of Technology. <https://news.mit.edu/2023/flow-batteries-grid-scale-energy-storage-0407>



enjoy this issue of the *USNC Current*, and we look forward to your contributions to the future of battery technologies.

As the U.S. National Committee President, I'm here for you. Together with the U.S. National Committee office, we represent the U.S. at the IEC. As your Head of Delegation, I represent U.S. interests in meetings with other countries and within the IEC. Most coordination

on specific topics happens through our U.S. Technical Advisory Groups (TAG), either through direct communications or through official votes and comments. However, communication does not stop there. I want your input and feedback; we can work better when we do it together. I invite you to contact me anytime at vlancaster@cta.tech. I look forward to hearing from you, getting to know you, and making our U.S. National Committee stronger together.



JUST PUBLISHED

Check out the latest and greatest recently published standards by the IEC. A complete list of recently published documents can be found [here](#). Here's just one (of many!) we think you'll find interesting:

IEC 61754-13:2024 CMV COMMENTED VERSION – FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC CONNECTOR INTERFACES – PART 13: TYPE FC-PC CONNECTOR FAMILY

IEC 61754-13:2024 CMV contains both the official standard and its commented version. The commented version provides you with a quick and easy way to compare all the changes between IEC 61754-13:2024 edition 3.0 and the previous IEC 61754-13:2006 edition 2.0. Furthermore, comments from IEC SC 86 B experts are provided to explain the reasons of the most relevant changes, or to clarify any part of the content.

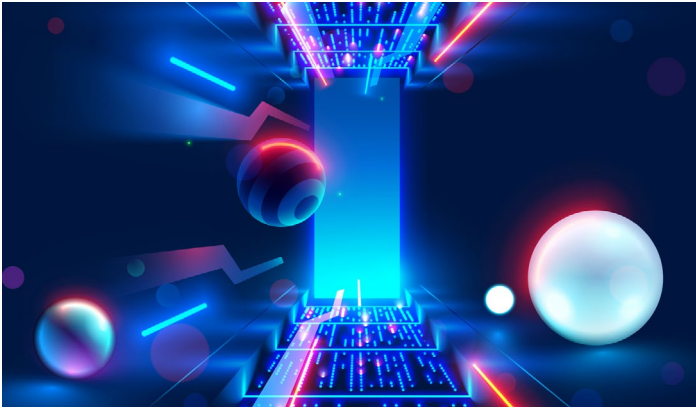
IEC 61754-13:2024 defines the standard interface dimensions for the type FC-PC family of connectors. This third edition cancels and replaces the second edition published in 2006. This edition constitutes a technical revision. This edition includes the following significant technical changes with respect to the previous edition:

- Revising normative reference reflecting the latest documents;
- Addition of intermateability in 5.2;
- Changes of dimensions of the plug connector interface in Table 2 and Table 3;
- Addition of Grade Am, Bm and Cm in Table 3.

Developed by **TC 86/SC 86B – Fibre optic interconnecting devices and passive components**.



USNC LAUNCHES NEW ONLINE PORTAL FOR TAG PARTICIPATION MANAGEMENT



In April, the USNC was thrilled to launch the [new online portal](#) for TAG participation management. Features of the new portal include: roster management for TAG officers and more user-friendly way to view and pay TAG invoices.

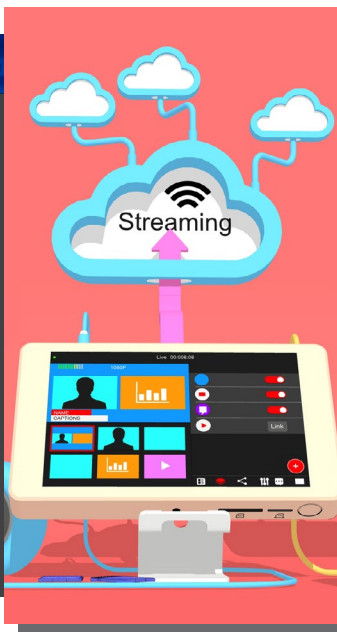
ANSI IT and USNC staff held a demo of the new program on April 11, 2024. TAG officers that missed the session are encouraged to review the [user guide](#) and review the [demo recording](#). Questions can be directed to usncbilling@ansi.org.

ANSI MEMBERSHIP WEBINARS

Membership in ANSI is the key to unlocking the benefits and opportunities that standardization can provide. Standardization and conformity assessment activities lead to lower costs by reducing redundancy, minimizing errors, and reducing time to market, resulting in enhanced profitability.

These interactive 30-minute webinars—held on the first Friday of each month and free of charge—are hosted live and provide an overview of ANSI's activities, as well as information on how to take full advantage of ANSI membership. A Q&A session encourages active dialogue between all participants.

For more details, visit our [website!](#)





ADVANCEMENT IN LITHIUM BATTERY STANDARDS: ENSURING SAFETY, PERFORMANCE, AND SUSTAINABILITY

Khaled Masri, Senior Program Manager - Industrial at NEMA; TAG Secretary to TC 15, TC 20, SC 21A, TC 26, TC 35, TC 112, ISO/IEC JTC 3 TAG Member




The landscape of lithium battery standards in the United States is dynamic—ensuring safety, performance, and environmental responsibility. A recent milestone is the publication of the American National Standard NEMA/ANSI C18.3M, Part 2-2024, *Portable Lithium Primary Cells and Battery Safety* in April 2024. This standard sets rigorous tests and requirements for various battery chemistries, aligning with UN recommendations and harmonizing internationally for market access.

Another significant standard, ANSI C18.3M, Part 1, *Portable Lithium Primary Cells and Batteries-General and Specifications*, is anticipated in the second quarter of 2024. It covers diverse electrochemical systems like lithium/carbon monofluoride, lithium/manganese dioxide, and lithium/iron disulfide.

Published in 2023, ANSI C18.5M, Part 1, *Portable Lithium Rechargeable Cells and Batteries—General and Specifications* contains improvements over its

predecessor. Notably, it aligns with IEC 61960 standards and introduces testing methods for flexible and wearable prismatic lithium-ion batteries.

Recognizing environmental concerns, standards like ANSI/NEMA C18.4M guide environmental testing and impact assessment, enhancing predecessor editions with detailed information sheets and compliance checklists.

These standards, developed through ANSI consensus by NEMA C18 Committee on portable cells and batteries, underscore a commitment to safety, performance, and sustainability in battery technology. The C18 Committee focuses on standardizing portable cells and batteries, covering chemical systems, dimensions, nomenclature, terminal configurations, markings, test methods, performance, safety, and environmental aspects. Comprising Producer, User, General Interest, and Testing Laboratory representatives, membership is open to those demonstrating Direct and Material Interest in the committee's scope. For inquiries, please email Khaled.masri@nema.org. 



THE POWER OF THREE: HOW THE UL ORGANIZATIONS ARE SUPPORTING LIFE-SAVING E-MOBILITY LEGISLATION IN NYC

Kenneth Boyce, Vice President, Engineering, UL Solutions; USNC TAG Member to IEC TC 22

Judy Jeevarajan, Ph.D., Vice President and Executive Director, Electrochemical Safety Research Institute, UL Research Institutes; Chair of IEC SC 21A; USNC TAG Member to IEC SC 21A and TC 35.

Zoe Susice, Senior Director of Research Amplification, Fire Safety Research Institute, UL Research Institutes

George A Borlase, Ph.D., P.E., Vice President of Standards Development, UL Standards & Engagement



Over the past five years, fire departments have encountered an unprecedented rise in fires caused by lithium-ion batteries, particularly from those powering micromobility devices. Large metropolitan areas like New York City have been significantly impacted by this problem. In 2019 and 2020, NYC had zero deaths linked to fires caused by lithium-ion batteries, but in 2021, the Fire Department of the City of New York responded to 104 lithium-ion battery fires that resulted in 79 injuries and four deaths. In 2022, micromobility-related fires nearly doubled to 200, resulting in six fatalities; and

in 2023 the number continued to rise with 268 battery fires that resulted in 18 fatalities and 150 additional injuries.^{1,2}

To address this rising issue, NYC lawmakers acted decisively to develop Initiative 663-A, which Mayor Eric Adams signed into law on March 20, 2023. Under the law, any e-mobility devices owned, rented, or leased in NYC are required to meet the following UL standards:

- » UL 2849, *Electrical Systems for e-Bikes*
- » UL 2272, *Electrical Systems for Personal E-Mobility Devices*

1 Reyes, R. (2024, March 3). More NYC fires caused by lithium-ion batteries from e-bikes in 2 months than in all of 2019: FDNY chief. New York Post. <https://nypost.com/2024/03/03/us-news/more-nyc-fires-caused-by-lithium-ion-batteries-in-two-months-than-in-all-of-2019-fdny-chief/>

2 "Examining the Fire Safety Hazards of Lithium-Ion Battery Powered e-Mobility Devices in Homes." (2022). Fire Safety Research Institute. <https://fsri.org/research/examining-fire-safety-hazards-lithium-ion-battery-powered-e-mobility-devices-homes>



» UL 2271, *Batteries for Use In Light Electric Vehicle Applications*

The signing of NYC's e-mobility law is an important step toward reducing battery fire incidents—not only in the city, but across the U.S., as the legislation can be used as a model for other large metropolitan areas working to address this important issue. The law also serves as an example of how UL Research Institutes, UL Standards & Engagement, and UL Solutions—three organizations united by one mission of working for a safer world—came together to partner with FDNY and city officials to help tackle this safety challenge.

PARTNERS IN SAFETY

In 2022, researchers from UL Research Institutes' Fire Safety Research Institute, Electrochemical Safety Research Institute, and UL Solutions, partnered with FDNY to explore the characteristics of lithium-ion battery chemistry and examine the fire safety hazards of lithium-ion battery powered e-mobility devices in homes.

Throughout this process, UL Solutions' team of technical experts worked closely with FDNY, the New York City Council and other officials to establish practical pathways to allow citizens to realize the full benefits of safe micromobility technologies. These pathways include recognizing the importance of third-party safety certification, helping the city safely and confidently access the safety science expertise and rigorous testing methodologies of the UL Solutions and UL Research Institutes—helping give peace of mind to those embracing micromobility products in their daily lives.

BACKED BY RESEARCH

Various symposiums were held with FDNY and the participating organizations, in which research was shared to illuminate the fire and thermal runaway risks associated with this high-energy-density battery chemistry. Researchers from ESRI emphasized how this battery chemistry is significantly impacted by design,

quality of manufacturing, charging, and consumer use, and how all factors impact the risks related to fire and thermal runaway.^{3,4,5,6}

In addition to sharing knowledge at these symposiums, researchers from FSRI and FDNY applied findings in the field by conducting a series of experiments in which an e-scooter was intentionally driven into overcharge in both a laboratory setting and a purpose-built single-family residential home test prop. Several valuable data outputs were collected during these experiments, which FDNY was able to reference in its advocacy for regulation. The findings included that an e-scooter battery fire can completely engulf a room in flames within 30 seconds of battery failure, underscoring the severity of the issue and the necessity to act.⁷

Leveraging the research and findings from the work with FDNY, FSRI went on to launch the [Take C.H.A.R.G.E. of Battery Safety](#) public safety campaign with the support of the U.S. Consumer Product Safety Commission and additional partners the U.S. Fire Administration and the Bureau of Alcohol, Tobacco, Firearms and Explosives. The campaign provides the public and the fire service with turnkey resources to drive best-practice behavior for owners and users of lithium-ion battery powered devices.

- 3 J. A. Jeevarajan, "Safety of Commercial Lithium-ion Cells and Batteries" in *Lithium-ion Batteries – Advances and Applications*, Ed. G. Pistoia, Elsevier Ltd., 2014.
- 4 J. A. Jeevarajan, "Chapter 8D, Managing of risk by manufacturers of consumer equipment" in the book entitled "Electrochemical Power Sources Fundamentals, Systems, and Applications – Li Battery Safety, Editors: Jürgen Garche, Klaus Brandt, Elsevier, Sept 2018.
- 5 J. Lamb and J. A. Jeevarajan, Guest Editors, "New developments in battery safety for large scale systems", *MRS Bulletin*, 46, 395–401 (2021). <https://doi.org/10.1557/s43577-021-00098-0>
- 6 J. Jeevarajan, T. Joshi, M. Parhizi, T. Rauhala and D. Juarez-Robles, "Battery Hazards for Large Energy Storage Systems", *ACS Energy Letters*, 7, 2725–2733, 2022.
- 7 Experiments Completed for Intentional Thermal Runaway on Lithium-Ion Batteries." (2022). Fire Safety Research Institute. <https://fsri.org/research-update/experiments-completed-intentional-thermal-runaway-lithium-ion-batteries>



In November 2023, Take C.H.A.R.G.E was made the national fire safety theme through USFA's Fire & Life Safety Communicators Initiative, with fire service organizations across the country and beyond sharing the key messages:

TAKE C.H.A.R.G.E. OF BATTERY SAFETY

- » **C** – Choose certified products
- » **H** – Handle with care
- » **A** – Always be alert for warning signs
- » **R** – Recycle lithium-ion batteries properly
- » **G** – Get out quickly
- » **E** – Educate others

In addition to the NYC law actively preventing the sale of substandard e-mobility products, the Take C.H.A.R.G.E campaign helps to educate e-mobility device owners on simple steps, backed by research, for preventing and minimizing the hazards of lithium-ion battery fires.

WHAT'S IN THE STANDARDS?

According to [ESRI](#), lithium-ion batteries should be designed to withstand environmental conditions such as shock and vibration (observed in rough terrains, speed bumps, etc.) and impact (such as when e-mobility devices are dropped on sidewalks). These batteries should also be designed to minimize hazards such as thermal runaway. Safety tests at the cell, module, and battery levels should be performed to set the relevant safety limits and confirm that the safety controls work as required.

The standards in the NYC law published by UL Standards & Engagement—UL 2849, UL 2272, and UL 2271—each meet these criteria through various construction, performance, marking, and instruction requirements that address the environmental, mechanical, and electrical hazards associated with e-mobility devices, while also helping to ensure users are informed on proper care and maintenance practices. Testing requirements in the standards help to simulate conditions that a device

may encounter during normal use such as high ambient temperatures, water exposure in the intended use of the e-bike, and vibration testing. Additionally, certain tests take abnormal use and foreseeable misuse into account, such as mechanical shock from a drop or fall, or overcharging due to a fault in the charging control circuitry. Temperatures of the e-bike electrical system are monitored during these tests, and the device will not pass if it exceeds certain limits, or if there is any indication of fire, explosion, rupture, electrolyte leakage, or electric shock hazard.

WHY NYC?

There are several compounding factors contributing to the rise in fires caused by lithium-ion batteries from e-mobility devices in large urban areas. The first is the popularity of e-mobility devices as a mode of transportation for commuters and a source of income for delivery workers. According to a [2024 study conducted by UL Standards & Engagement](#), 54% of e-mobility device owners purchased e-bikes or e-scooters for work, and 72% used them for delivery gigs in the 12 months preceding the study.

Adding to this is the close proximity of living spaces, where fires are known to spread from one apartment to another, and even to adjacent buildings. The nature of lithium-ion battery fires also plays a significant role, as they can initiate hours or even days after an e-bike has sustained damage, they can burn faster and more aggressively than other fires, and they are difficult to extinguish and can reignite even after being put out.

Finally, there is a troubling knowledge gap among e-bike and e-scooter riders about the main technology powering their devices and the associated safety risks, which contributes to unsafe behavior. According to the same study, the majority of e-mobility device owners are unaware that their e-bike (53%) or e-scooter (54%) is powered by a lithium-ion battery. More than half (55%) leave them plugged in after reaching full charge, 42% routinely charge overnight, and 23% charge them unattended while away from home. Nearly half (49%)



of those who charge e-bikes at home do so in a location that blocks egress in the event of a battery fire, such as an entryway, by the front door, or in a hallway.

These unsafe behaviors and risks are not exclusive to NYC, however. San Francisco tells a similar story, with 215 battery fires documented since e-bikes and e-scooters gained popularity there in 2017. Other cities like Washington, D.C. and Denver are working to address the issue with [incentive programs](#) to encourage residents to buy safer devices. And at the federal level, H.R. 1797—the Setting Consumer Standards for Lithium-Ion Batteries Act, which would require the U.S. Consumer Product Safety Commission to issue a safety standard for rechargeable lithium-ion batteries used in e-mobility devices, passed in the U.S. House of Representatives and is making its way to the Senate at the time of this writing.

WORKING FOR A SAFER WORLD

UL Research Institutes, UL Standards & Engagement, and UL Solutions are three organizations united by one mission: working for a safer world. Each organization has a distinct focus: UL Research Institutes advances safety science by sensing risk and conducting rigorous independent research that accelerates discoveries; UL Standards & Engagement mobilizes that powerful science into action through advocacy and standards; and UL Solutions brings safety science to life, helping businesses solve pressing challenges and innovate with confidence. Together, we bring forward diverse expertise required to confront current and emerging safety challenges. 



**DECISION
DEPOT**
NOW BOARDING

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 link below to access the recent decisions.

See the Decision Lists below for decisions made at the following meetings: SMB meeting 179 held on 2024-02-28 in Sydney, Australia; SMB meeting 180 held on 2024-06-14 in Geneva, Switzerland; and CAB meeting 55, held on 2024-06-10 & 11 in Geneva, Switzerland.

[SMB/8120A/DL](#)

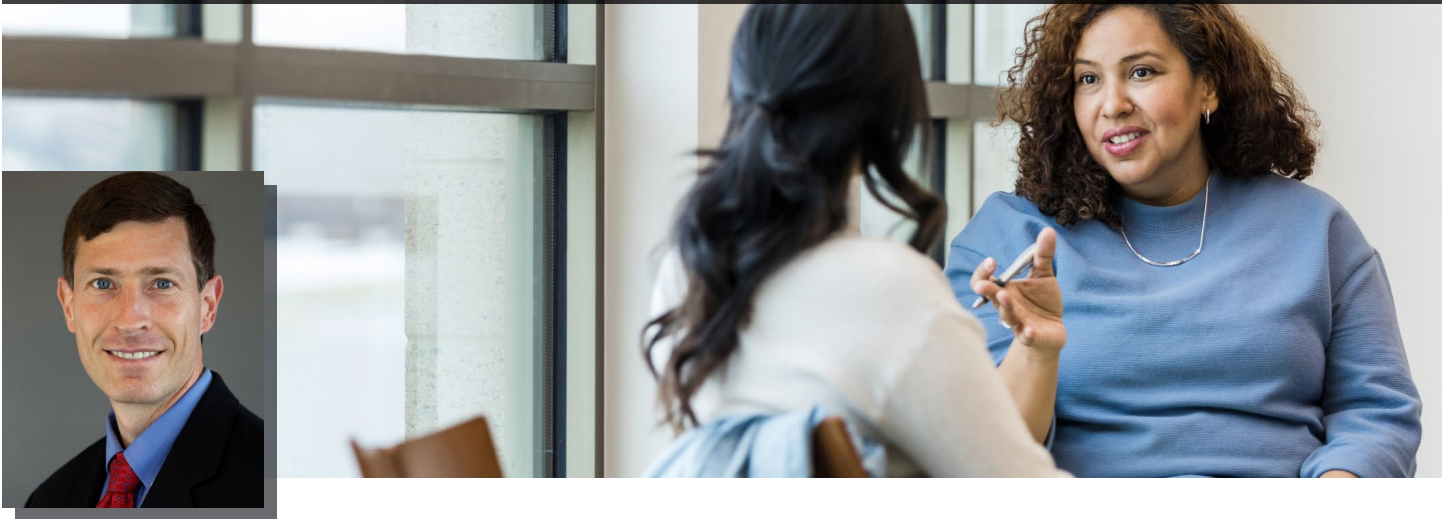
[SMB/8180/DL](#)

[CAB/2517/DL](#)



USNC STRATEGIC OBJECTIVES HIGHLIGHTS: COMMUNICATE & EDUCATE

Ethan Biery, Senior Systems Applications Engineering Leader at Lutrom Electronics; USNC Communications Committee Chair, USNC TMC Member



This article is second in a series explaining the importance of the USNC Strategic Objectives.

“Communicate and Educate” is one of the five [strategic objectives of the USNC](#). Why is this so important, and how does the USNC support the ongoing development of its thousands of members in order to sustain the U.S.’s presence in the global standards and conformity assessment community?

By its very nature, the USNC constituency is an extremely diverse group, made up of thousands of members, hundreds of companies, and dozens of industries. Furthermore, individual members bring extensively varying knowledge, experience, and skill sets to the work they do for the many groups and committees. In order to be most effective however, it’s important that all participants have a base level of knowledge on a few core topics. It is also equally important that members stay abreast of changes and updates to topics of interest to the community.

These needs are nicely summarized by the “Communicate and Educate” objective, and they are the primary

focus of the USNC Communications Committee. The members of the Committee focus on providing valuable information and training to the members of the USNC constituency, with the goal of ensuring all members have the opportunity to learn how to be most productive in their respective roles.

To this end, the Communications Committee has recently worked on several projects to support the “Communicate and Educate” objective:

MENTORING

There are currently 11 mentor-protégé pairings, representing the third cohort of the USNC mentoring program. This program has already proven to be extremely valuable in quickly developing new standards and conformity assessment experts by pairing new participants with experienced veterans. Many of us remember early confusion and frustration during our first years working within the community: there are long histories and documents that need to be learned and understood. There are new relationships of trust and acclamation



that needs to be developed. And, of course, there are acronyms that need to be deciphered. Without a mentoring program, new participants were often left on their own to find details. However, we have heard from multiple protégés that have already participated in the mentoring program that they were more confident and more rapidly able to participate after being paired with a supportive mentor. Consider becoming a mentor, or refer an up-and-coming USNC participant to become a protégé. Email usnc@ansi.org for details, and watch for more stories about the USNC mentoring program in future *USNC Current* issues.

ONLINE AND IN-PERSON TRAINING

Newcomers to the USNC and the global standards-setting process must often first learn about the complex and unique processes and structures behind the IEC. Then, as they develop their skills and influence, they may also take on leadership positions within various committees or groups of the USNC or IEC. Gaining that initial baseline knowledge and building upon it is critical for an individual's success.

For years, the USNC has hosted an [Education and Training](#) website, with a few presentations and recorded webinars about the basic structure and roles within the USNC and IEC. There's also material there about effective IEC participation and TAG leadership, and why standards work should be important to both new participants and their employers. However, research has shown that this is an underutilized resource, and that more can be done to bring updated and relevant content to all levels of participation within the USNC.

The Communications Committee is working on a project to update, organize, and enhance the training material on that site, making it relevant to different types of constituents. This is expected to include new and updated materials, videos, and even links to external supplementary resources, such as those found on the main IEC website. Furthermore, knowing that effective communication skills are essential in working across organizations and cultures, we expect to add materials

that help foster these skills. If you're interested in lending your training talents to this initiative, reach out to ANSI staff to let them know!

Beyond online modules, the USNC regularly hosts live virtual and in-person training classes. For example, this year this year we held the USNC TAG Leadership Workshop and IEC Processes and Procedures Course on April 16 and 17 in Washington, DC. These high-impact courses are highly recommended for both new and existing TAG leaders, or those planning to grow into a leadership role within the IEC. While continuously updated to ensure they cover the newest and most relevant topics, these courses have repeatedly received high marks from their attendees for their importance and value. [See USNC Spring 2024 Trainings](#) for more information. Watch for the annual Effective IEC Participation webinar in the fall.

OUTREACH

An important part of any organization is to ensure that there is a sufficient supply of incoming talent to replace individuals that may retire or leave for other opportunities; the USNC is no different. It's commonly known that many participants within the standards and conformity assessment communities are later in their careers, and that it is important to recruit new individuals early in their careers. However, the importance of standards and the standards-creation process isn't often well understood by many engineers or the organizations they work for. Ensuring that technical experts are aware of the opportunities to influence the development of global standards, and their organizations are supportive of their efforts through time and financial commitments, is critically important to the future of the USNC and its global influence. To that end, the Communications Committee has worked on several initiatives:

- » [The Don Heirman Award Program](#): This annual competition was designed to raise awareness of the importance of standards, specifically around




Electromagnetic Compatibility (EMC), by awarding \$1,000 to a winning essay written by current secondary-education student or recent graduate.

- » **USNC Overview Video:** This short video was designed to be a quick introduction to the USNC, its role in influencing global standards, and why it's important for the U.S. technology industry. It's meant to introduce new members to opportunities that exist within the USNC, and why they might want to participate.
- » **Value of Participation in the USNC Video:** This short video is being developed to help influence companies to support their employees' participation within the USNC through testimonies from several current participants. Many companies may not understand how they can influence standards in order to get a competitive advantage in today's global marketplace.

ONGOING COMMUNICATION

Since you're reading this article, you're obviously aware of the importance and value of the *USNC Current*. This quarterly newsletter has been designed to provide quick, timely, and relevant updates to a variety of topics facing the electrotechnical industry. Many of the articles are submitted by USNC members, who are encouraged to share their expertise with a broad audience, and give a glimpse into issues that challenge they industry now and into the future. Contact USNC staff if you have interest in submitting an article!

We hope this summary of the efforts being made to Communicate and Educate the broader USNC constituency inspire you to learn more on how to grow your effectiveness, or perhaps recruit further individuals or companies to participate in the vital work of the USNC. Taking full advantage of the effective participation of all its members, the USNC can continue to play a leading role on the global stage of standards and conformity assement. 



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IEC AND ISO NEW JOINT TECHNICAL COMMITTEE ON QUANTUM TECHNOLOGIES



The IEC and the International Organization for Standardization (ISO) today announced the establishment of a joint technical committee on quantum technologies, IEC/ISO JTC 3: Quantum technologies.

Because quantum technologies have immense potential to address today's global challenges, it is crucial to build a solid foundation for collaboration. International standards play a pivotal role in laying an essential common ground to accelerate the development and adoption of quantum advancements in various industries and applications.

"While standards are already being developed for some aspects of quantum technologies, there is a pressing need to have a coordinated international approach to streamline technical contributions and maximize their impact, ensuring greater coherence in the market," explains Philippe Metzger, IEC Secretary-General and CEO.

"Catalyzing the quantum revolution requires a shared language. Standards provide the framework to turn diverse quantum efforts into a unified force, driving progress, ensuring reliability, and paving the way for

a quantum future that is secure, interoperable, and globally accessible," says Sergio Mujica, ISO Secretary-General.

The scope of this new IEC/ISO joint technical committee is to develop standards in the field of quantum technologies, and more particularly quantum computing, quantum simulation, quantum sources, quantum metrology, quantum detectors, and quantum communications. South Korea will assume the chair position. The British Standards Institution (BSI), which hosts the IEC National Committee for the United Kingdom and is also the ISO member, will hold the Secretariat.

"Quantum technologies can unlock solutions to address the greatest societal challenges. As the secretariat, BSI is looking forward to bringing our wealth of expertise in committee management to this and we are committed to leading and driving the development of International Standards to guide the evolution and integration of quantum technologies, fostering innovation for the benefit of industries and society globally," says Scott Steedman, Director General, Standards, BSI, Secretariat of IEC/ISO JTC 3, Quantum technologies.



Quantum technology is the second generation of technologies that harness the power of quantum mechanics to create advanced tools and devices that promise to revolutionize how we solve complex problems and secure information across a range of sectors, including information technology, communications, healthcare, energy, trade, sustainability, education, and research, ushering in a new era of technological progress while driving rapid financial growth.

MAKE AN IMPACT ON QUANTUM TECHNOLOGIES: JOIN USNC TAG FOR NEW IEC/ISO JOINT TECHNICAL COMMITTEE

The [American National Standards Institute](#) encourages interested experts to participate in the USNC Technical Advisory Group (TAG) for the newly formed International Electrotechnical Commission (IEC)/International Organization for Standardization (ISO) Joint Technical Committee (JTC) 3, Quantum Technologies.

In January, the USNC Technical Management Committee approved the National Institute of Standards and Technology (NIST)—which has released two documents on Quantum Readiness [open for public comment](#)—as the USNC TAG Administrator for JTC 3.

ABOUT JTC 3 ON QUANTUM TECHNOLOGIES

Following the approval of a proposal from the British Standards Institution (BSI) for IEC and ISO to form a JTC, in November 2023, the IEC Standardization Management Board (IEC/SMB) and the ISO Technical Management Board (ISO/TMB) announced the scope of the JTC 3:

- » Standardization in the field of quantum technologies.


» The scope includes standardization in the field of quantum technologies, including quantum information technologies (quantum computing and quantum simulation), quantum metrology, quantum sources, quantum detectors, quantum communications, and fundamental quantum technologies. The JTC will coordinate the results of these efforts with relevant committees and subcommittees that have within their scopes the development of specific sector-based applications of quantum technologies.

» Excluded: Specific sector-based applications and standardization in the fields of information technology (JTC 1 and its subcommittees), nanotechnology (IEC TC 113 and ISO TC 229), fibre optics (IEC TC 86), cryogenic vessels (ISO TC 220), and semiconductors (IEC TC 47).

» Liaisons: JTC 1 and its appropriate subcommittees, IEC TC 46, IEC TC 47, IEC TC 62, IEC TC 86, IEC TC 90, IEC TC 113, ISO TC 172, ISO TC 201, ISO TC 206, ISO TC 220, ISO TC 229, ITU-T, ETSI, CEN & CENELEC JTC 22.

The new JTC will operate under the IEC Directives Supplement and IEC IT system, and ANSI staff assigned to the USNC/IEC will facilitate and coordinate related activities; the ANSI internal oversight of the USNC TAG for the new JTC is under the USNC Technical Management Committee (USNC/TMC).

HOW TO GET INVOLVED

Stakeholders interested in becoming a member of the USNC TAG to JTC 3 should email Ade Gladstein (agladstein@ansi.org). 



USNC CELEBRATES 2023–2024 PROFESSIONAL MENTORING PROGRAM PARTICIPANTS!

As the 2023–2024 USNC professional mentoring program wraps up later this month, we'd like to take the time to say thank you to all of our mentors and protégés for investing their time with us! This 10-month commitment demands effort not only by the protégé but by our volunteer mentors as well.

Thank you to our program mentors who decide again and again to make a difference in the standards and conformity assessment world. A special thanks goes out to mentors who have volunteered their time to serve in every cohort since the inception of the program back in 2021: Curtis Bender, Jonathan Colby, and George Gela.

Thank you to our protégés who have thoughtfully developed learning goals for themselves, and put in the time and effort into reaching them.

Please join us in celebrating our 2023–2024 cohort on the completion of their program!

MENTORS



Joe Antony,
UL Solutions

Chris Bender,
Tennant

**Thomas
Burke,**
UL Solutions

**Jonathan
Colby,**
*Streamwise
Development*

George Gela,
BETC

**Elisabeth
George,**
*Elisabeth
George
Consulting,
LLC*

**Katy
Holdredge,**
UL Solutions

**Mike
Leibowitz,**
NEMA

**Khaled
Masri,**
NEMA

Paul Orr,
NEMA

PROTÉGÉS



**Darryll
Bachoo,**
*Rockwell
Automation*

Mariah Dixon,
*UL Standards
& Engagement*

**Amanda
Johnson,**
Festool USA

Eevi Maki,
*Schweitzer
Engineering
Laboratories*

**Ashleigh
McNaboe,**
*Boston
Scientific*

**Marcel van
Rensburg,**
*Schweitzer
Engineering
Laboratories*

Kayla Wilson,
*Milwaukee
Electric Tool
Company*

Mentor not pictured:
Kirsten Burpee, *Ohmium
International, Inc.*

Protégés not pictured:
James Brown, *Werfeb*
Tulio Carvalho, *General
Electric*
Priyanka Nadkar,
*Schweitzer Engineering
Laboratories*

For a full list of USNC professional mentoring program participants over the years, [click here](#).

Interested in joining? The USNC is currently accepting applications for the 2024–2025 professional mentoring program. For more information, and to download the [application](#), please visit [our website](#). Questions can be directed to Megan Pahl at mpahl@ansi.org.



HIGHLIGHTS FROM ANSI'S COMPANY MEMBER FORUM

ANSI's Company Member Forum (CMF) provides a venue for ANSI company members to come together to discuss both national and global standards and conformity assessment issues. The forum generates cross-industry conversations and partnerships. The CMF held their last meeting on March 21st–22nd at HP, Inc. in Houston, Texas, and it was a great success.

The group received updates on U.S. government policy and international activities, followed by a discussion on the intellectual property concerns of Digital Product Passport (DPP). A major focus during the two-day meeting was on sustainability and the role of standards in meeting energy and climate targets, including digital certification systems, transparency, and tamper-proof chain of custody for clean energy trading.

A much-anticipated panel included two experts from Google and Microsoft who discussed the recently published ISO/IEC 42001, *Artificial Intelligence Management System* (AIMS) that provides a certifiable AIMS framework in which AI systems can be developed and deployed as part of an AI assurance ecosystem. Generative AI is a very important topic, especially in understanding risk management. Through standards, education, and open collaboration, we can teach our professionals to keep bias out of the technology and application.

The Company Member Forum encourages participation. For more details on how to get involved in the CMF, please see the [ANSI Membership Brochure](#) or contact ANSI Membership at membership@ansi.org.



USNC/IEC TRAINING & EDUCATION

New to USNC? The USNC provides education and training resources for electrotechnical standardization and conformity assessment.

We encourage you to take advantage of our training opportunities available now on the [USNC webpage!](#)

- » USNC Constituency Training Modules
- » USNC Effective IEC Participation Webinar (2023 Webinar now available!)
- » USNC & IEC Conformity Assessment 101
- » Why IEC Standards Work Is Important to My Company
- » Benefits of Standards Work for Emerging Professionals

Looking for more? IEC Academy & Capacity Building hosts frequent webinars. You can access past webinar recordings and register for upcoming webinars [here](#).



CALL FOR STANDARDS ACTION AND PARTICIPATION



USNC MEMBERS ENCOURAGED TO APPLY: USNC COMMUNICATIONS COMMITTEE

Individuals who are interested in joining the USNC Communications Committee are encouraged to contact Megan Pahl (mpahl@ansi.org) to sign up! This committee is in the process of developing new training resources and materials for the [USNC Education & Training webpage](#); join today to make an impact.

SCOPE

The USNC Communications Committee creates and implements an effective messaging plan in support of USNC activities. The committee develops, implements, and promotes targeted training programs for USNC constituency.

RESPONSIBILITIES

The responsibilities of the USNC Communications Committee shall include but are not limited to the following:

- » Develop and maintain the list of key messages to be emphasized in USNC communications and trainings
- » Communicate USNC news items and initiatives through official USNC and ANSI channels such as newsletters, social media, and training materials
- » Develop, conduct, and coordinate trainings and workshops
- » Report to the USNC Council at USNC Management Meetings

MEETING FREQUENCY

The USNC Communications Committee meets three times a year. Additional meetings may be added for specific working groups.

Questions can be directed to Megan Pahl (mpahl@ansi.org).



United States
National Committee
of the IEC



JOIN THE USNC LINKEDIN GROUP

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 electro-technical 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 Megan Pahl (mpahl@ansi.org).



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.

DISCLAIMER

The opinions expressed by the authors are theirs alone and do not necessarily reflect the opinions of the USNC or ANSI.

HOW TO CONTRIBUTE

Contributions are gladly accepted for review and possible publication, subject to revision by the editors. Submit proposed news items to: Megan Pahl, mpahl@ansi.org.