

ICC Newsletter

Act now! Special offer to first-time utility attendees to the ICC Fall meeting – ten complimentary registrations! Please contact billtaylor@pesicc.org.

From the ICC Chair



Yingli Wen

With 437 attendees, the ICC Spring 2022 meeting in Anaheim, Calif. was a big success. After two years of no in-person meetings, we were eager to get together again to work on standards, exchange

technical knowledge and ideas, learn about new trends in the industry, and meet new and old friends. I was very happy to see so many familiar as well as new faces.

As usual, the technical presentations in subcommittee sessions and discussion group meetings provided valuable information to our attendees. The Education Session, themed “Resilient Power System – Operation During Disasters,” was of special interest,

as it featured presentations from Anaheim Public Utilities and industry experts on the strategies and challenges to make power cable systems more resilient. An added highlight was a tour of Anaheim Public Utilities’ new 69 kV indoor GIS substation, which serves up to 15,000 customers.

As this year marks the 75th year of ICC operation, the opening session keynote address by our own Henk Geene on the past and future of ICC was timely and captivating. Henk’s sense of humor came through as frequent laughter filled the room. A copy of Henk’s presentation is available in the Spring 2022 ICC minutes; it is a must-read if you want to learn about the history of the ICC.

This is an exciting and challenging time for our industry. Energy generation decentralization

has led to a more complex grid. To support this complexity, the 5G mobile network has become the new wireless standard for managing the many renewable energy sources that are available. 5G is increasingly important with the fast-growing smart grid market. As companies move toward the remote/office hybrid work model, 5G is also being used to support workforce mobility applications.

It goes without saying that the ICC is just the place for the industry to address these challenges and develop new standards for new technologies. I look forward to seeing you in Orlando.



Yingli Wen, Ph.D.

Consolidated Edison Company of New York

A Great Opportunity for Utilities *By Brent Richardson, Subcommittee A Chair, Richardson Bros Services*

Electric utilities have a tremendous opportunity to be actively involved in material and installation standards that govern insulated cables and conductors. The Insulated Conductors Committee (ICC), a Technical Committee of the Power and Energy Society (PES) of the IEEE, has seen a troubling downward trend of utility representatives attending its meetings decreasing from a high of 28.7% in Fall 2008 to a low of 18.6% in Spring 2022.

If this issue is not addressed, North American utilities will find themselves in the same situation as their European counterparts by having only narrow choices for cable materials specified in the standards by others (i.e., non-utilities) to which the utilities must comply.

Consistent utility representation provides a voice for utilities in the development of standards and balances the influence of material suppliers and manufacturers to provide a well-rounded view of issues and solutions for critical components of utility generation, transmission, and distribution assets.

In return, utility attendees gain a network of trusted colleagues to provide counsel and input to solve problems and test ideas. The ICC is an ideal place for utility representatives to build that network not only of other utility colleagues but also manufacturers, equipment and labor providers, and academia. In all likelihood, if a utility is experiencing an issue, other utilities are, or will, as well. There is no

value in reinventing the wheel when collaborative approaches among a network of knowledgeable parties will provide a much more efficient and effective solution.

Please consider the responsibility and need for the utility voice in these critical utility issues and provide representation for your utility at the next ICC meeting to be held in Orlando, FL, October 30-November 2, 2022. Please visit www.pesicc.org to stay informed of the most recent information related to the ICC.

ICC Newsletter Team

Rachel Mosier, ICC Communications Chair
Harry Orton, Associate Editor

ICC Standards Corner

By Kathryn Klement,
ICC Assistant
Standards Coordinator

Since our Spring meeting, the IEEE Standards Board has approved another new ICC standard: IEEE 2417, *Guide for Early Detection, Mitigation, Preventative Measures, and Response to Smoke, Fire, and Explosions in Underground Electrical Structures* – WG C34W, chaired by Bill Black.

There are currently several ICC standards in various stages of balloting. If you are an IEEE SA member but do not receive notifications to participate in ICC ballots, you can sign up for notifications as follows:

- Sign in to “My Project” at development.standards.ieee.org
- Click “Menu” on the top right, choose “Manage Profile & Interests,” and select “Interests”
- Add PE/IC to your groups for all ICC notifications or select the specific working groups of interest to you.

Thanks to all the active working group members for your continued time and dedication to standards development.



In Memorium

Pierre Argaut

Pierre Argaut was a husband, a father, a grandfather, a member of the “Electricity” family, and a friend. He lived many lives, always with energy and involvement. He was always mindful and present, and he was open and honest.

Pierre graduated as an electrical engineer from the Institut d’Electrotechnique de Grenoble in 1971. He joined Delle-Alsthom (now part of Alstom Grid) in November 1971 and held several positions before leading the R&D Department on Gas Insulated Systems (GIS). He was humble and at the same time so happy to have met his professional passion, electricity. Highly appreciated and quickly efficient, he was proud to have filed several patents and to be recognized for his professional value.

Pierre joined SILEC in 1988 in Montereau, France after serving as operations manager of the South European Pipeline. He developed a solid professional career based on innovation, research and development. Pierre initiated an internal strategic initiatives program and developed expertise in the key technical area of insulated cables and accessories. He was recognized by the successive CEOs of SAGEM and General Cable Companies.

Pierre retired at the end of 2010 from his last position with SILEC as senior vice president. It was a purely “administrative” retirement, as he continued to work until the end of his life. Always soberly proud of his accomplishments, he continued to transfer his knowledge within his company and to his professional community. Throughout his illness, he continued to

write Volume 2 of the CIGRE Green Book on cable accessories, and one of his last wishes was to have it published.

Pierre served diligently on a variety of cable accessory industry organizations and committees, including CIGRE, where he served as Chair of Study Committee B1 *Insulated Cables* from 2010 to 2016, and as the main editor and sponsor of the CIGRE Green Book *Accessories for HV and EHV Extruded Cables*. He was an active member of the ICC, where he was instrumental in developing IEEE 1727-2013 *Guideline for Working Procedures on Underground Transmission Circuits with Induced Voltage*. He also made important contributions to IEEE 575 *Guide for Bonding Shields and Sheaths of Single-Conductor Power Cables Rated 5 kV through 500 kV*.

He received several industry awards including:

- CIGRE Technical Committee Award in 2000
- CIGRE Distinguished Member Award in 2002
- Honorary Member of CIGRE in 2016
- IEEE/ICC Technical Committee Distinguished Service Award in 2018

He will be remembered for his contributions to the industry, his brilliant intelligence, his natural gift as a mentor to colleagues and friends, his vitality, his permanent attentive ear for everybody, and his desire to be always inclusive.

Pierre is survived by his wife of 44 years, Christiane, and 4 children: Philippe, Olivier, Valérie and Brice, and 6 grandchildren. All his ICC and CIGRE colleagues will keep the fondest memories of him. Let our thoughts and prayers go to his family.

Fall ICC 2022 Education Session: Offshore Wind Application of Submarine Power Cable

Arie Makovoz, Consolidated Edison and Education Session Chair; Kai Zhou, UL and Education Session Vice Chair

As of 2022, the Bureau of Ocean Energy Management within the US Department of the Interior had leased 27 commercial offshore wind farm areas along the eastern seaboard of the United States, with additional sites planned. The goal is to supply 30 GW of offshore wind power to the mainland grid by 2030. The connections from turbines to grid will be made using submarine cables.

Offshore wind farms have been in service in Europe for more than 30 years, but until now only seven offshore wind turbines (0.042 GW) are in service within the US. This educational session will cover the basics of both AC and DC high-voltage submarine cables that will be used to connect the wind farms to the mainland grid. Experienced panelists from manufacturing, installation and wind farm developers will share their knowledge of submarine cable systems applicable to offshore wind farms. A Q&A session with our panelists will be included.

Join us for an enlightening afternoon at the Hyatt Regency in Orlando on Wednesday, November 2, from 1:00 - 5:00 pm.

IEEE 2417 - A Guide 65 Years in the Making

By Stuart Hanebuth, Vice President Utilities, Safety Management Group and C34W Chair

In August, the IEEE published a first-of-its-kind guide on manhole events: IEEE 2417, *Guide for Early Detection, Mitigation, Preventative Measures, and Response to Smoke, Fire, and Explosions in Underground Electrical Structures*. The guide follows several prior attempts by past ICC groups to address the problem of manhole events dating back to the 1950s.

Annually, utilities respond to many thousands of cases of smoke, fire and explosions in underground electrical structures around the country, collectively referred to as “manhole events.” While many of them result only in damage to electric cables and accessories, each year utility workers, first responders and the public are injured or killed in these events.

The first reference to an ICC working group on the topic of manhole fires dates to 1957 when an “Arcing Fault Task Group” was established. The Project 10-20 group met regularly and discussed arc-proofing materials, fusing and cable fault limiters. The group stopped meeting in 1963.

In 1988, Project 7-40 was initiated to address the mitigation of manhole events and, in 1997, prepared a PAR to develop a guide. Eventually Project 7-40 became the ICC C10 working group. C10 stopped in 2003 after 15 years of work. The latest effort to develop a guide began as C34D in 2011 and was chaired by Dr. William Z. Black.

The long history of this guide’s development highlights the complexity of this issue. A complete treatment of this topic requires an understanding of electrical faults, cable insulation systems, combustion chemistry, explosion physics, risk management and emergency response. Over the course of five years, the group prepared presentations, solicited input from outside experts, compiled existing research documents, and prepared a white paper which ultimately became the basis for the guide. In 2016, the IEEE approved a PAR for the development of a guide.

The most significant advancement in the guide details the evolution of manhole events from nascency all the way to manhole fires and explosions, integrating the mechanical, chemical and electrical elements of these events. **Figure 1** not only details the evolution of these events, but also serves as a visual index to the guide. Each of the numbered shapes in the figure refers to a like numbered subclause in the guide.

To help better explain the evolution of manhole events, three distinct stages of manhole events were defined: nascent manhole events (NMEs), imperceivable manhole events (IMEs) and perceivable manhole events (PMEs).

Additionally, the guide contains detailed discussions of the root causes of manhole events, combustion chemistry, preventative measures,

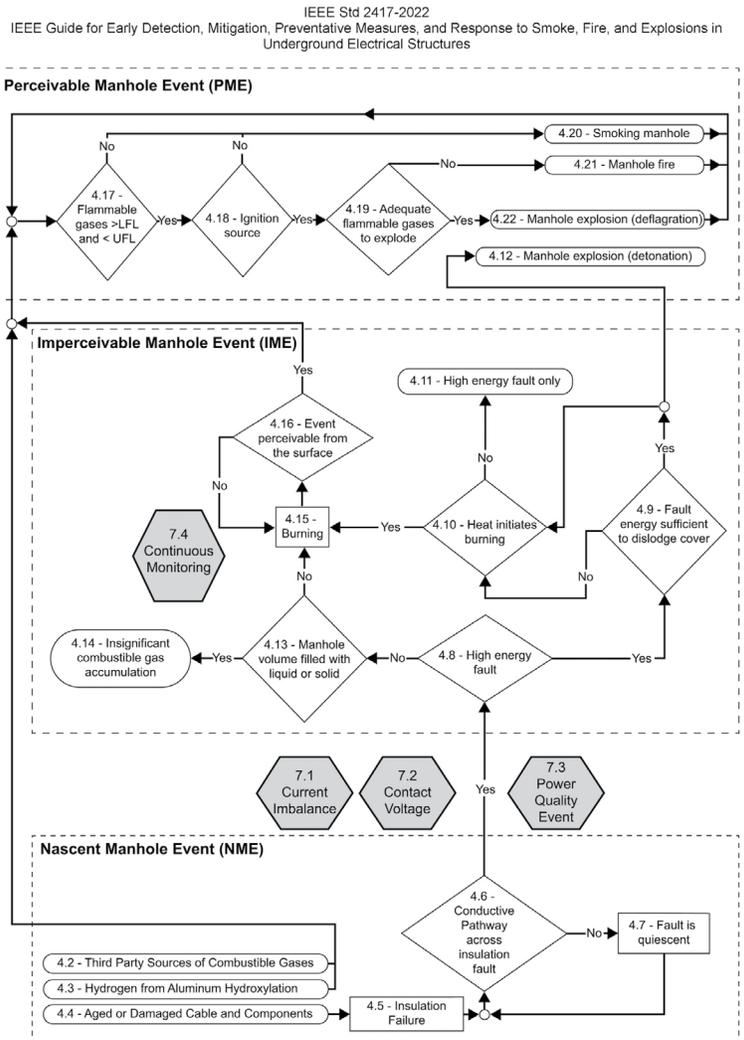


Figure 1 – Root causes of manhole events

event detection techniques, explosion modeling, response tactics, risk assessments and methods to retard event escalation. The guide was approved in March 2022 with a nearly unanimous vote.

Working Group C34W plans to meet during the Fall and Spring meetings to discuss this important topic. If you would like more information on the working group, please contact: Stuart Hanebuth (stuhanebuth@safetymanagementgoup.com) or Wes Spencer (wes.spencer@powereng.com).



Remembering Ted Nishioka

It is with heavy hearts that we share news of the passing of Teruo “Ted” Nishioka. Ted was a long-time attendee of the ICC Meeting and served as chair of Subcommittee C in addition to his other committee leadership roles. Prior to his retirement from Arizona Public Service (APS), he was an active member of the AEIC Cable Engineering Committee. Ted received his bachelor’s degree in electrical engineering from California State Polytechnic College - San Luis Obispo. One of his first professional positions was as an engineer at Hoover Dam Hydro-electric Power. He spent 34 years at APS in Phoenix, Ariz. specializing in underground transmission cable systems. Ted was a kind person who always greeted colleagues with a smile. He was generous with his knowledge, always willing to share with anyone who asked. Ted was also an active member of the Arizona Buddhist Temple, served on the Matsuri Committee, and a board member of the Japanese American Citizens’ League for five years. He was an Army veteran of the Vietnam War. Ted is survived by his wife of 44 years, Sue, whom many will know from her attendance at so many ICC receptions. He is also survived by his daughter, Stephanie, his sister Fumi, and two brothers, Tadao and Stan.

International Events Calendar

Compiled by Harry Orton

Reminder: The continuing world situation has made it very difficult to provide accurate conference listings and dates as some conferences have gone virtual while others have changed dates, relocated or have been cancelled. Please refer to the respective website for up-to-date conference information. Be very careful when searching the Internet for conferences and symposia as there are fraudulent websites advertising predatory conferences with very similar names. Their sole purpose is to collect papers and registration fees.

2022

Floating Offshore Wind 2022

12-13 October, P&J Live,
Aberdeen, UK
events.renewableuk.com

Wire Trade Fair

25-27 October
Sao Paulo, Brazil
wire-tradefair.com

CEIDP (Conference on Electrical Insulation and Dielectric Phenomena)

30 October-2 November 2022,
Denver, Colo., USA
ceidp.org

CMD (International Conference on Condition Monitoring and Diagnostics)

13-18 November 2022,
Kitakyushu, Japan.
www2.iee.or.jp/~cmd2022

2023

INSUCON (International Electrical Insulation Conference)

April 2023,
Birmingham, UK
insucon.org

Interwire 2023

9-11 May 2023,
Atlanta, Ga., USA
wirenet.org

IEEE PES International Conference & Exposition Conference (GT&D Turkey 2023)

22-25 May,
Istanbul, Turkey
ieee-gtd.org

Global Offshore Wind

14-15 June,
London, UK
events.renewableuk.com

EIC (Electrical Insulation Conference)

18-21 June,
Quebec City, Canada
sites.ieee.org/eic

ICEA Energy Cable Standards Updates

By Jared Weitzel, ICEA 1st VP Energy Division

The Insulated Cable Engineers Association (ICEA) has returned to in-person meetings, but still has a virtual attendance option for those members with limited travel availability. Our most recent meeting was June 2022 in Mystic, Conn. with 10 out of 14 Energy Division member companies in attendance and the remaining four participating remotely. The next meeting is scheduled for September 2022 in Deerfield Beach, Fla. Work that the Energy Division has underway or recently completed includes these recently published documents:

- ANSI/ICEA T-28-562, *Test Method for Measurement of Hot Creep of Polymeric Insulations*
- ANSI/ICEA P-117-734, *Ampacities for Single-Conductor Dielectric Power Cables 15 kV Through 35 kV*

Documents under review or in the balloting process include:

- ANSI/ICEA T-22-294, *Test Procedures for Extended Time-Testing of Wire and Cable Insulations for Service in Wet Locations*
- ANSI/NEMA WC 58/ICEA S-75-381, *Portable and Power Feeder Cables for Use in Mines and Similar Applications*
- ANSI/NEMA WC 54/ICEA T-26-465, *Guide for Frequency of Sampling Extruded Dielectric Power, Control, Instrumentation and Portable Cables for Test*
- ANSI/ICEA P-45-482, *Short-Circuit Performance of Metallic Shields & Sheaths*
- NEMA WC 57/ICEA S-73-532, *Standard for Control, Thermocouple Extension, and Instrumentation Cables*
- ANSI/ICEA S-70-547, *Weather Resistant Polyethylene Covered Conductors*
- ANSI/NEMA WC 74/ICEA S-93-639, *Shielded Power Cables 5,000 - 46,000 V*
- NEMA WC 71/ICEA S-96-659, *Nonshielded Cables Rated 2001-5000 V for Use in the Distribution of Electric Energy*
- ANSI/ICEA S-97-682, *Standard for Utility Shielded Power Cables Rated 5 Through 46 kV*
- ANSI/ICEA S-113-684, *Performance Based Standard for Electric Utility Extruded Dielectric Shielded Power Cables Rated 5 Through 46 KV*
- ANSI/ICEA S-121-733, *Standard for Tree Wire and Messenger Supported Spacer Cable*
- ANSI/NEMA WC 10100/ICEA S-129-755, *Standard for High-Temperature Instrumentation and Control Cables for the Transmission and Distribution of Low Voltage Electrical Energy*

Working groups developing new standards are:

- WG 726, *Pellet Inspection Systems*
- WG 738, *VFD Cables <= 2 kV*
- WG 750, *Wind Turbine Cables*
- WG 751, *MV DC Cables*

Additional information about ICEA and its standards can be found at ICEA.net.

Tell Us What You Think!

ICC welcomes your feedback. If you'd like to suggest topics for upcoming issues of the ICC Newsletter or add a colleague to our email database, please contact Rachel Mosier at r.mosier@pdc-cables.com.

Upcoming ICC Events

Fall 2022: 30 October-2 November 2022, Orlando, Fla.

Spring 2023: 30 April-3 May 2023, Denver, Colo.

Fall 2023: 30 October-2 November 2023, New Orleans, La.