

## IEEE Power and Energy Society Entity Annual Report

2022

**Entity: Insulated Conductors Committee (ICC)**

**Website:** <https://pesicc.org/iccwp>

**Chair: Yingli Wen**

**Vice-Chair: Bert Spear**

**Second Vice-Chair: Mike Mueller**

**Immediate Past Chair: Henk Geene**

### 1. Significant Accomplishments:

After suspension of in-person meetings for two years, due to the COVID-19 pandemic, we resume and successfully conducted our semiannual onsite committee meetings in 2022. The Spring meeting in May 2022 had an attendance of 437 and the Fall meeting in November had an attendance of 440. The average attendance of the past eight in-person meetings is 487. Majority of working groups resume work on their PARs during the in-person meeting. A number of working groups also conducted virtual meetings in addition. Following are Standard Board approvals:

New Standards:

- [2417-2022 \(PE/IC\)](#)  
IEEE Guide for Early Detection, Mitigation, Preventative Measures, and Response to Smoke, Fire, and Explosions in Underground Electrical Structures

Revised Standards:

- [404-2022 \(PE/IC\)](#)  
IEEE Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV
- [1617-2022 \(PE/IC\)](#)  
IEEE Guide for Assessment, Mitigation, and Control of Corrosion of Metallic Shields in Extruded Dielectric Cables rated 5 kV to 46 kV
- [400.3-2022 \(PE/IC\)](#)  
IEEE Guide for Partial Discharge Field Diagnostic Testing of Shielded Power Cable Systems

New PARs:

- [P3148 \(PE/IC\)](#)  
Guide for Field Detection of Metallic Sheath Current of Single-conductor



Shielded and Cross-linked Polyethylene (XLPE) Insulated Alternating Current (AC) Cable

- [P3150 \(PE/IC\)](#)

Guide for Testing the Semi-Conductive Water Blocking Tape in Cross-Linked Polyethylene Insulated Alternating-Current Power Cables

PARs for revision of standards:

- [P82 \(PE/IC\)](#)

Recommended Practice for Impulse Voltage Tests on Insulated Cables and Their Accessories

- [P1143 \(PE/IC\)](#)

Guide on Shielding Practice for Low Voltage Cables

- [P400.2 \(PE/IC\)](#)

Guide for Field Testing of Shielded Power Cable Systems Using Very Low Frequency (VLF) (less than 1 Hz)

- [P1793 \(PE/IC\)](#)

Guide for Planning and Designing Transition Facilities between Overhead and Underground Transmission Lines

Modified PARs:

- [P2789 \(PE/IC\)](#)

Guide for the Selection and Application of Cables Used in Enclosed Transit Infrastructure

- [P1202 \(PE/IC\)](#)

Standard for Flame-Propagation Testing of Wire and Cable

ICC accepted and sponsored the following entity PARs:

- P0040 (now called P3148) - *Guide for Field Detection of Metallic Sheath Current of Single-conductor Shielded and Cross-linked Polyethylene (XLPE) Insulated Alternating Current (AC) Cable*

- P0041 (now called P3150) - *Guide for Testing the Semi-Conductive Water Blocking Tape in Cross-Linked Polyethylene Insulated Alternating-Current Power Cables*

## **2. Benefits to Industry and PES Members from the Committee Work:**

The documents above will be beneficial to the respective groups, generally in the area of utility power systems, industrial / petroleum plants, and nuclear facilities.

Attendees to the semiannual meetings benefit from networking, exchange technical knowledge, discussion of new industrial trends and more.

### 3. Benefits to Volunteer Participants from the Committee Work:

Volunteers involved in ICC work have the ability to use their knowledge and experience to develop the standards and guides used in the industry in which they work. ICC participation also provides opportunities to hear interesting and often educational presentations on relevant industry activities.

### 4. Recognition of Outstanding Performance:

#### *Insulated Conductors Committee Certificates of Appreciation*

At each ICC meeting, Certificates of Appreciation are presented for the best presentation at a Subcommittee, Working Group, Discussion Group or Educational Program meeting. The following will be presented at our Spring and Fall 2022 meetings:

<b>Recipient</b>	<b>Citation</b>
James Steele	for Best Presentation at the Fall 2019 Subcommittee A Meeting <i>Extending the Life of Secondary Service Cables with Silicone-Gel Injection</i>
Dave Busby	for Best Presentation at the Fall 2019 Subcommittee A Meeting <i>Extending the Life of Secondary Service Cables with Silicone-Gel Injection</i>
Rodrigue Tonfack	for Best Presentation at the Fall 2019 Subcommittee A Meeting <i>Extending the Life of Secondary Service Cables with Silicone-Gel Injection</i>
Nathan Laurie	for Best Presentation at the Fall 2019 Subcommittee A Meeting <i>Extending the Life of Secondary Service Cables with Silicone-Gel Injection</i>
David Hughes	for Best Presentation at the Fall 2019 Subcommittee B Meeting <i>Update on Deadfront Separable Arrester Activity in IEEE Standard C62.11 and IEC 60099-4</i>
Brian Korves	for Best Presentation at the Fall 2019 Subcommittee B Meeting <i>Update on Deadfront Separable Arrester Activity in IEEE Standard C62.11 and IEC 60099-4</i>
David Campilii	for Best Presentation at the Fall 2019 Subcommittee C Meeting <i>Implementation of SCFF/HVED Transition Joints for Partial Replacement of 115 kV SCFF Cable System</i>
Milan Uzelac	for Best Presentation at the Fall 2019 Subcommittee C Meeting <i>Implementation of SCFF/HVED Transition Joints for Partial Replacement of 115 kV SCFF Cable System</i>
Sarajit Banerjee	for Best Presentation at the Fall 2019 Subcommittee F Meeting <i>Overview and Illustration of Technical Factors Influencing Medium Voltage Cable PD Assessment Outcomes</i>
Vitaliy Yaroslavskiy	for Best Presentation at the Spring 2022 Subcommittee B Meeting <i>Challenging the Problem of Power Cable Connectability</i>

Rajesh Narayanan	for Best Presentation at the Spring 2022 Subcommittee B Meeting Challenging the Problem of Power Cable Connectability
Lynette Aquino	for Best Presentation at the Spring 2022 Subcommittee C Meeting Electric System Hardening Strategic Undergrounding
Sissi Xu	for Best Presentation at the Spring 2022 Subcommittee C Meeting Electric System Hardening Strategic Undergrounding
Yang Cao	for Best Presentation at the Spring 2022 Subcommittee D Meeting Grand Electrification – Challenges and Opportunities for Insulated Conductor Engineering
Arie Makovoz	for Best Presentation at the Spring 2022 Subcommittee F Meeting Commissioning of 138 kV Cable System with “Intelligent” Underground Vaults
Janet Lonneker	for Best Presentation at the Spring 2022 Educational Program Building Resiliency into Electric Grid Design and Operations

### ***IEEE PES Technical Committee Certificates of Appreciation***

Likewise, the following IEEE PES Technical Committee Certificates of Appreciation will be presented at our next in-person meeting to all outgoing Subcommittee, Working Group and Discussion Group Chairs and Vice Chairs, or upon publication of their IEEE standard or guide:

<b>Recipient</b>	<b>Citation</b>
Earle C. (Rusty) Bascom, III	for Services Rendered as Chair, Insulated Conductors Committee Spring 2018 – Fall 2019
Yingli Wen	for Services Rendered as Chair, Subcommittee A <i>Cable Construction and Design</i> Spring 2017 – Fall 2019
Michael Mueller	for Services Rendered as Chair, Subcommittee C <i>Cable Systems</i> Fall 2016 – Fall 2019
Detlef Wald	for Services Rendered as Chair, Discussion Group A06 <i>Accelerated Electrical Aging</i>
Brent Richardson	for Services Rendered as Chair, Discussion Group A14 <i>Power Cable Standards</i>
Bill Taylor	for Services Rendered as Chair, Working Group B1 <i>IEEE 48-2020 Standard for Test Procedures and Requirements for Alternating- Current Cable Terminations Used on Shielded Cables Having Laminated Insulation Rated 2.5 kV through 765 kV or Extruded Insulation Rated 2.5 kV</i>



Power & Energy Society®

	<i>through 500 kV</i>
Aaron Norris	for Services Rendered as Vice-Chair, Working Group B1 <i>IEEE 48-2020 Standard for Test Procedures and Requirements for Alternating-Current Cable Terminations Used on Shielded Cables Having Laminated Insulation Rated 2.5 kV through 765 kV or Extruded Insulation Rated 2.5 kV through 500 kV</i>
Michael Lauxman	for Services Rendered as Chair, Working Group B9 <i>IEEE 1493-2006 Guide for the Evaluation of Solvents Used for Cleaning Electrical Cables and Accessories</i>
Jason Fosse	for Services Rendered as Vice-Chair, Working Group B9 <i>IEEE 1493-2006 Guide for the Evaluation of Solvents Used for Cleaning Electrical Cables and Accessories</i>
Eugene Weaver	for Services Rendered as Chair, Working Group B24 <i>IEEE 495-2007 Guide for Testing Faulted Circuit Indicators</i>
Briana Reed-Harmel	for Services Rendered as Vice-Chair, Working Group B24 <i>IEEE 495-2007 Guide for Testing Faulted Circuit Indicators</i>
Dave Purnhagen	for Services Rendered as Chair, Working Group C5 <i>IEEE 1406-2020 Guide for the Use of Gas-in-Fluid Analysis for Paper and Laminated Paper-Polypropylene Insulated Cable Systems</i>
Dennis Johnson	for Services Rendered as Vice-Chair, Working Group C5 <i>IEEE 1406-2020 Guide for the Use of Gas-in-Fluid Analysis for Paper and Laminated Paper-Polypropylene Insulated Cable Systems</i>
Dennis Johnson	for Services Rendered as Chair, Working Group C23 <i>IEEE 1793-2012 Guide for Planning and Designing Transition Facilities between Overhead and Underground Transmission Lines</i>
John E. Merando, Jr.	for Services Rendered as Chair, Working Group D5 <i>IEEE 1185-2019 Recommended Practice for Cable Installation in Generating Stations and Industrial Facilities</i>
William G. Bloethe	for Services Rendered as Vice-Chair, Working Group D5 <i>IEEE 1185-2019 Recommended Practice for Cable Installation in Generating Stations and Industrial Facilities</i>
Herb Stansberry	for Services Rendered as Vice-Chair, Working Group D8 <i>IEEE 634-2005 Standard for Cable-Penetration Fire Stop Qualification Test</i>
John E. Merando,	for Services Rendered as



Jr.	Chair, Working Group D14 <i>IEEE 422-2012 Guide for the Design of Cable Raceway Systems for Electric Generating Facilities</i>
William G. Bloethe	for Services Rendered as Vice-Chair, Working Group D14 <i>IEEE 422-2012 Guide for the Design of Cable Raceway Systems for Electric Generating Facilities</i>
Herb Stansberry	for Services Rendered as Chair, Working Group D15 <i>IEEE 1202-2006 Standard for Flame-Propagation Testing of Wire &amp; Cable</i>
Herb Stansberry	for Services Rendered as Vice-Chair, Working Group D21 <i>Standard Test for Determining Circuit Integrity Performance of Fire Resistive Cable Systems in Passenger Rail and Road Tunnels</i>
Henk Geene	for Services Rendered as Keynote Speaker at Spring 2022 Meeting <i>The Past, Present and Future of Insulated Conductors</i>
Detlef Wald	for Services Rendered as Chair, Working Group A13 <i>IEEE 1407-2021 Guide for Accelerated Aging Tests for 5 kV to 46 kV Extruded Electric Power Cables Using Water-Filled Tanks</i>
Lakshman Raut	for Services Rendered as Secretary, Working Group A13 <i>IEEE 1407-2021 Guide for Accelerated Aging Tests for 5 kV to 46 kV Extruded Electric Power Cables Using Water-Filled Tanks</i>
Aaron Norris	for Services Rendered as Secretary, Discussion Group B22 <i>Distribution Cable Joints and Terminations</i>
Vince Curci	for Services Rendered as Chair, Discussion Group C40 <i>Replacement of Pipe Type Cables with XLPE Cables While Retaining the Steel Pipe</i>
Bill Larzelere	for Services Rendered as Chair, Working Group F06 <i>IEEE 400.5-2021 Guide for Field Testing of DC Shielded Power Cable Systems Rated 5 kV and Above with High Direct Current Test Voltages</i>
Dominique Bolliger	for Services Rendered as Secretary, Working Group F06 <i>IEEE 400.5-2021 Guide for Field Testing of DC Shielded Power Cable Systems Rated 5 kV and Above with High Direct Current Test Voltages</i>

5. **Coordination with Other Entities (PES Committees, CIGRE, standards, etc.):**



Power & Energy Society®

IAS/PCIC, PES/NPEC, and PES/PGC. In addition, coordination with CSA, Mexico, and UL takes place on a working group level for some selected standards for which there is mutual interest. We also have a liaison with CIGRE Group B1 that also focuses on insulated conductors. Also, the involvement of ICC in the Entity Proposal Management and coordination with Satellite Committees, mainly in China, has become significant part of our coordination activities.

**6. New Technologies of Interest to the Committee:**

Subjects of specific interest:

- HVDC cable systems and the impact of renewables on the cable network.
- HVAC submarine cable to connecting off-shore windfarms to the main grid
- Sustainability of Power Cable Materials

**7. Global Involvement & YP Involvement**

PES is looking to increase involvement with members from Regions 8, 9 and 10 (Africa, Europe, Middle East, Latin America, Asia and Pacific). Please provide the following information.

Please also provide information on the number of young professionals that are involved in your committee.

Total Number of committee members	Number of Young Professionals (under 35 years of age) – Including committee & subcommittee	Officers from regions 8,9 and 10	Subcommittee officers from regions 8, 9 and 10	Subcommittee members from regions 8,9, and 10
550	150	1	3	33

**8. Problems and Concerns:**

Although beneficiaries of majority of IEEE standards developed and maintain by ICC are utilities. ICC historically has low participations from utilities. The main concern is that utilities typically have limited travel budgets for conferences and committee work.

The participation of utility engineers is vital for the quality of our work of ICC, as the utilities are still the driving force behind the business of Insulated Conductors.

For this reason, IEEE and ICC should work together, reaching out to the utility managers to advertise the need for good standards and the importance of knowledge exchange.

**9. Significant Plans for the Next Period:**

To increase the involvement of the utilities as they are the driving force behind our work.

**Submitted by: \_\_Yingli Wen, ICC Chair**

**Date: January 31, 2022**