

IEEE Power and Energy Society Entity Annual Report

2023

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:

Following the two successful semiannual in-person meetings post pandemic in 2022, ICC continued its normal operations in 2023. The Spring meeting in May 2023 had an attendance of 517 and the Fall meeting in November 2023 had an attendance of 502, a 16% increase in annual attendance compared to the prior year. The average attendance of the past ten in-person meetings is 450. Majority of working groups resume normal 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:

- **IEEE 2412** *Standard Test for Determining Circuit Integrity Performance of Fire Resistive Cable Systems in Passenger Rail and Road Tunnels*

Revised Standards:

- **IEEE 400.3** *Guide for Partial Discharge Field Diagnostic Testing of Shielded Power Cable Systems*
- **IEEE 404** *Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV*
- **IEEE 1235** *Guide for Properties of Stripes and Ridges for Identification of Underground Power Cable Jackets and Ducts*
- **IEEE 1617** *Guide for Assessment, Mitigation, and Control of Corrosion of Metallic Shields in Extruded Dielectric Cables rated 5 kV to 46 kV*
- **IEEE 82** *Recommended Practice for Impulse Voltage Tests on Insulated Cables and Their Accessories*
- **IEEE 383** *Standard for Qualifying Electric Cables and Splices for Nuclear Facilities*

- **IEEE 400** *Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems Rated 5 kV and Above*
- **IEEE 634** *Standard for Cable-Penetration Fire Stop Qualification Test*
- **IEEE 1202** *Standard for Flame-Propagation Testing of Wire and Cable*

New PARs:

- **P1844** – *Standard Test Procedure for Determining Circuit Integrity Performance of Fire Resistive Cables in Nuclear Facilities* (WG D19W)
- **P3174** – *Guide for Dynamic Rating of Underground Cable Systems* (WG C36W)
- **P400.4** – *Guide for Field Testing of Shielded Power Cable Systems Rated 5 kV and Above with Damped Alternating Current (DAC) Voltage* (WG F05W)
- **P2776** – *Guide for Specifying and Selecting Cables for Nuclear Facilities* (WG D20W)

PARs for revision of standards:

- **P2789** – *Guide for the Selection and Application of Cables Used in Transit Infrastructure* (WG D23W)
- **P495** – *Standard for Testing Faulted Circuit Indicators* (WG B24W)
- **P1186** – *Recommended Practice for Applicability of Methods for the Evaluation of Low Voltage and Medium Voltage Installed Cable Systems in Nuclear Facilities* (WG D07W)
- **P1793** – *Guide for Planning and Designing Transition Facilities between Overhead and Underground Transmission Lines* (WG C23W)

ICC accepted and sponsored the following entity PARs:

- **P2810** – *Guide for Field Dielectric Enhancement of Polyethylene and Cross-linked Polyethylene 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 were presented at our Spring and Fall 2023 meetings:

Recipient	Citation
Sverre Hvidsten	for Best Presentation at the Fall 2022 Subcommittee A Meeting <i>Time to Failure Testing of Submarine Cables in Saltwater at High Temperatures and Electrical Stress</i>
Liza Banhalmi Kramer	for Best Presentation at the Fall 2022 Subcommittee B Meeting <i>Primary Bushing Failures on Con Edison Network Transformers</i>
Tom Campbell	for Best Presentation at the Fall 2022 Subcommittee B Meeting <i>Primary Bushing Failures on Con Edison Network Transformers</i>
Clay Brelsford	for Best Presentation at the Fall 2022 Subcommittee C Meeting <i>Cathodic Protection Applications for Pipe-Type Cable Installations</i>
Craig Goodwin	for Best Presentation at the Fall 2022 Subcommittee F Meeting <i>A Multi-tool Approach to MV/HV Cable Testing in the Field</i>
Robert Hobson	for Best Presentation at the Fall 2022 Educational Program <i>Submarine Cable System for Offshore Wind Farms</i>
Jim Guo	for Best Presentation at the Spring 2023 Subcommittee A Meeting Gas Discharges in Cavities
Nigel Hampton	for Best Presentation at the Spring 2023 Subcommittee A Meeting Gas Discharges in Cavities
Mohamadreza ArabBaferani	for Best Presentation at the Spring 2023 Subcommittee A Meeting Gas Discharges in Cavities
Alejandro Escobin	for Best Presentation at the Spring 2023 Subcommittee B Meeting Universal HV Cable Repair Kit
Mark Stemmler	for Best Presentation at the Spring 2023 Subcommittee C Meeting SuedLink – The world’s longest 525kV HVDC land cable system
Bert Spear	for Best Presentation at the Fall 2022 Subcommittee D Meeting Medium Voltage Cable Replacement at Oconee Nuclear Station
David Rouison	for Best Presentation at the Spring 2023 Subcommittee D Meeting Electrical Test Protocol for Improved Field Assessment of LV Cables in Nuclear Plants

Sarajit Banerjee	for Best Presentation at the Spring 2023 Subcommittee D Meeting Electrical Test Protocol for Improved Field Assessment of LV Cables in Nuclear Plants
Andrew Mantey	for Best Presentation at the Spring 2023 Subcommittee D Meeting Electrical Test Protocol for Improved Field Assessment of LV Cables in Nuclear Plants
Mark Fenger	for Best Presentation at the Spring 2023 Subcommittee F Meeting 20 Years of Experience with Electrical Testing of HV & EHV Cable Systems
Marc Dodeman	for Best Presentation at the Spring 2023 Educational Program Submarine Power Cable Systems – Design, Planning, Implementation and Repair

IEEE PES Technical Committee Certificates of Appreciation

Likewise, the following IEEE PES Technical Committee Certificates of Appreciation were presented at our Spring and Fall 2023 meetings to all outgoing Subcommittee, Working Group and Discussion Group Chairs and Vice Chairs, or upon publication of their IEEE standard or guide:

Recipient	Citation
Tom Campbell	for Services Rendered as Chair, Subcommittee B <i>Accessories</i> Spring 2019 - Fall 2022
Jody Levine	for Services Rendered as Chair, Working Group F04 <i>IEEE 400.3-2023 Guide for Partial Discharge Field Diagnostic Testing of Shielded Power Cable Systems</i>
Joshua Perkel	for Services Rendered as Secretary, Working Group F04 <i>IEEE 400.3-2023 Guide for Partial Discharge Field Diagnostic Testing of Shielded Power Cable Systems</i>
Gabe Taylor	for Services Rendered as Chair, Subcommittee D <i>Generating Station and Industrial Cables</i> Spring 2018 – Spring 2023
Jeff Madden	for Services Rendered as Chair, Working Group B02 <i>IEEE 404-2022 Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV</i>
Ivan Jovanovic	for Services Rendered as

	Secretary, Working Group B02 <i>IEEE 404-2022 Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2.5 kV to 500 kV</i>
Jun Guo	for Services Rendered as Chair, Working Group A05 <i>IEEE 1235-2023 Guide for Properties of Stripes and Ridges for Identification of Underground Power Cable Jackets and Ducts</i>
Lakshman Raut	for Services Rendered as Secretary, Working Group A05 <i>IEEE 1235-2023 Guide for Properties of Stripes and Ridges for Identification of Underground Power Cable Jackets and Ducts</i>
Martin Von Herrmann	for Services Rendered as Chair, Working Group F07 <i>IEEE 1617-2022 Guide for Assessment, Mitigation, and Control of Corrosion of Metallic Shields for Extruded Dielectric Cables Rated 5 kV to 46 kV</i>
Nadim Giotis	for Services Rendered as Secretary, Working Group F07 <i>IEEE 1617-2022 Guide for Assessment, Mitigation, and Control of Corrosion of Metallic Shields for Extruded Dielectric Cables Rated 5 kV to 46 kV</i>

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

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:

- Sustainability of Power Cable Materials
- Real Time Monitoring of Cable Systems
- Separable Connectors for Cable of 69 kV and Above

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: February 12, 2024