

# IEEE Power and Energy Society Entity Annual Report 2018

**Entity: Transmission & Distribution**

**Website: <http://sites.ieee.org/pes-td/>**

**Chair: Gary Chang**

**Vice-Chair: Surya Santoso**

**Secretary: Eriks Surmanis**

**Immediate Past Chair: Dan Sabin**

**1. Significant Accomplishments:**

There are 7 subcommittees and approximate 80 WGs/TFs under T&D Committee. Currently there are over a dozen standards are under revision or waiting for approval.

**CAPACITOR SUBCOMMITTEE**

- IEEE Std 1036, Guide for the Application of Shunt Power Capacitors has been out to Ballot. The ballot was closed on 1-Aug-2018 and in ballot comment resolution.
- IEEE Std 1531-2013, Guide for the application specification for Harmonic Filters is being sent out to Ballot. PAR expired on 31-Dec-2020.

**DISTRIBUTION SUBCOMMITTEE**

- The draft for IEEE P1806, Guide for Reliability Based Placement of Overhead and Underground Switching and Overcurrent Protection Equipment Up to and Including 38 kV, is complete. The draft will enter ballot in 2019.
- The IEEE P1854 Draft Guide for Smart Distribution Applications Guide ballot closed in Sept. 2018 and is in comment resolution.

**ENGINEERING IN THE SAFETY, MAINTENANCE AND OPERATION OF LINES (ESMOL) SUBCOMMITTEE**

- IEEE P1071 Draft Application Guide for an Engineered Restoration Program for Failed Transmission Structures is currently in ballot comment resolution. (PAR set to expire in 12/2018)
- Balloting of IEEE P1307-2018, Standard for Fall Protection of Utility Work, was closed in Aug 2018 and has been submitted to RevCom. (PAR set to expire in 12/2018)
- IEEE P516, Guide for Maintenance Methods on Energized Power Lines, to be submitted for balloting in Aug. 2018. (PAR set to expire in 12/2018, will decide if a PAR extension is necessary)
- IEEE P1882, Guide for Establishing, Benchmarking, and Maintaining a Working Program for Energized Transmission Lines, is to be submitted for balloting (PAR set to expire in 12/2018, will decide if a PAR extension is necessary)
- The 14th IEEE International Conference on T&D Construction, Operation and Live-Line Maintenance - ESMO Conference is set for June 24-27, 2019 in Columbus, OH. ([www.ieee-esmo.com](http://www.ieee-esmo.com))

## HVDC & FACTS SUBCOMMITTEE

The subcommittee participated in meetings with State Grid Corporation of China (SGCC) facilitated by the IEEE Standards Association related to the establishment of three working groups for new standards related to Unified Power Flow Controllers. These meetings resulted in the submission of three new PARs to IEEE SA:

- ↗ P2745.1 Guide for Technology of Unified Power Flow Controllers (UPFC)  
Multilevel Converter Part 1: Functions
- ↗ P2745.2 Guide for Technology of Unified Power Flow Controllers (UPFC)  
Multilevel Converter Part 2: Terminology
- ↗ P2745.3 Guide for Technology of Unified Power Flow Controllers (UPFC)  
Multilevel Converter Part 2: Thyristor Bypass Switch

## OVERHEAD LINES SUBCOMMITTEE

- ↗ The IEEE P644 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines closed its ballot pool in April 2018 and is in recirculation review.
- ↗ The IEEE P1542 Guide for Installation, Maintenance, and Operation of Irrigation Equipment Located Near or Under Power Lines closed its balloting in October 2018 and has been submitted to RevCom.
- ↗ IEEE 656 Standard for the Measurement of Audible Noise from Overhead Transmission Lines has been submitted to RevCom.
- ↗ IEEE Std 1260-1996, Guide on the Prediction, Measurement, and Analysis of AM Broadcast Reradiation by Power Lines, is in revision. Its draft is complete. Balloting was closed in June 2018 and submitted to RevCom.
- ↗ IEEE 563, Guide on Conductor Self-Damping Measurements, is in revision. Balloting should begin later in 2018.
- ↗ IEEE P1227, Guide for the Measurement of DC Electric-Field Strength and Ion Related Quantities is in revision. Balloting should begin in Spring 2019.
- ↗ IEEE P539, Standard Definitions of Terms Relating to Corona and Field Effects of Overhead Power Lines. Balloting should begin in Spring 2019.

## POWER QUALITY SUBCOMMITTEE

- ↗ The draft of the revision of IEEE Std 1159 on Monitoring Electric Power Working Group is in recirculation. Balloting closes in February 2019.
- ↗ Balloting of the draft of the revision of IEEE Std 1159.3 on Power Quality Data Interchange Format (PQDIF) closed in Nov. 2019 and has been submitted to RevCom.
- ↗ Balloting of the revision to IEEE 1250, Guide for Identifying and Improving Voltage Quality in Power Systems, closed in July 2018 and has been submitted to RevCom.
- ↗ Many of the subcommittee members organized the IEEE International Conference on Harmonics and Quality of Power, which was held in May 2018 in Ljubljana, Slovenia.

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

The scope of the Transmission and Distribution Committee is the treatment of all matters related to the design, theoretical and experimental performance, installation, and service operation of parts of electric



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power systems which serve to transmit electric energy between the generating sources and substations or customer points of common coupling through AC or DC lines. In 2018, the committee has provided benefit to industry by:

- ↗ Developing and managing standards and guides pertaining to capacitors, distribution systems, lightning, power quality, overhead lines and the design and integration of renewable energy.
- ↗ Providing tutorials and panel sessions on timely topics including power quality data analytics, wind and solar integration, microgrids, smart grid in transmission and distribution, and distributed energy resources.
- ↗ Providing industry with a venue for participating in cutting edge research and best practices dialogs; and participating in the standards making process with over twenty projects in progress or under consideration.

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

The IEEE PES Transmission & Distribution Committee provides benefits to its volunteer participants in the following ways:

- ↗ Offering participants an opportunity to work with acknowledged leaders in shaping the T&D industry and informing on T&D issues
- ↗ Affording industry leadership role for volunteer participants
- ↗ Providing a forum for networking with peers from the T&D industry

### **4. Recognition of Outstanding Performance:**

The following member of the T&D Committee was elevated to IEEE Fellow this past year:

- ↗ Hideki Motoyama, for contributions to lightning protection and insulation coordination of electric power systems

Other Award winners include

- ↗ IEEE PES Award for Excellence in Power Distribution Engineering: Dan Sabin.
- ↗ Douglass M. Staszkesky Distribution Automation Award: Mike Simms, Duke Energy
- ↗ Uno Lamm HVDC Award: Hong Rao
- ↗ IEEE PES Nari Hingorani FACTS Award: Bruce Fardanesh

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

- ↗ Smart Grid Coordinating Committee
- ↗ 1547.7 Working Group
- ↗ PES Emerging Technology Coordinating Committee
- ↗ PES Wind Integration Coordinating Committee
- ↗ Liaison with PSOPE Committee
- ↗ Liaisons with numerous IEC, CIRED and CIGRE committees
- ↗ Liaisons with numerous NESC and ANSI committees.
- ↗ Liaisons with US National Committee for CIRED via IEEE PES Distribution Subcommittee and IEEE PES Power Quality Subcommittee
- ↗ Liaison with NEMA via Capacitor Subcommittee
- ↗ Editor-in-Chief of Power and Energy Magazine needs a liaison to T&D Committee. It was decided that T&D Committee's Vice Chair is to be the liaison.

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

There are several areas of new technology interest with the T&D Committee. Smart Grids continue to be of interest, especially smart meters and their requirements. Another area of interest to the committee is microgrids.

## **7. Significant Plans for the Next Period:**

The six subcommittees of the T&D Committee have brought more than a dozen standards to complete or near complete draft by the time of the 2019 IEEE Joint Technical Committee Meeting. Many of the working groups completing these standards have stated intentions to have these new drafts in ballot in 2019. This gives potential for many new or revised standards to be completed in 2019.

The committee will be sponsoring three new IEEE guides on new technology related to Unified Power Flow Controller (UPFC) systems. This will give the committee a chance to participate in standards developed by the IEEE Entity process and to collaborate with IEEE members from State Grid Corporation of China (SGCC).

**Submitted by: Gary Chang**

**Date: 2019-02-04**