

**IEEE Distribution Subcommittee
Meeting Minutes
January 11, 2017
New Orleans, LA**

ADMINISTRATIVE

Chair Julio Romero Aguero called the IEEE Distribution Subcommittee meeting to order at 1:30 p.m. with 20 members/guests present. Introductions were the first order of business. The 2016 JTCM minutes were reviewed. A motion to accept the minutes was made by Rob Naplen, seconded by Fred Friend and the vote to approve was passed.

Manuel Avendano was nominated for Vice Chair by Julio Romero Aguero. Rob Naphem made the motion to elect Manuel to Vice Chair, seconded by Mani Venkata, unanimously passed.

CHAIR REPORT – Julio Romero Aguero, Distribution Subcommittee

I have represented the Distribution Subcommittee in the following activities.

- I finished my term as Editor of IEEE Transactions on Power Delivery (TPWRD), assisting the Editor-in-Chief, Prof. Wilsun Xu from University of Alberta, in the review of distribution related papers. Our Vice Chair, Manuel Avendano, from ComEd has officially taken my place in the Editorial Board of TPWRD in representation of the IEEE Distribution Subcommittee. I encourage our membership to approach Manuel and volunteer to collaborate as a reviewer.
- I am also serving as Chair of the IEEE Working Group on Distributed Resources Integration.
- I have been serving in the IEEE PES Technical Policy Support Task Force. Tom Pierpoint from PHI and I are responsible for the Task Force activities in conferences, including organization of panel sessions and tutorials.
- I contributed to the May/June issue of IEEE Power and Energy Magazine by co-authoring the article: “Modernizing the Grid: Challenges and Opportunities for a Sustainable Future”, with Erik Takayesu from SCE, and Damir Novosel (PES President) and Ralph Masiello from Quanta Technology.
- I participated in the following activities in the 2017 IEEE ISGT Conference:
 - Moderator of Panel Session on Recent Trends and Developments in Grid Modernization
 - Panelist of Panel Session on Grid Edge Resilience and Control Technologies with Microgrids and Self-Healing Functions
 - Panelist of Panel Session on Opportunities and Challenges for PMU Implementation in Distribution Systems and Microgrids
- I will participate in the following activities at the 2017 IEEE PES General Meeting:
 - Moderator of Panel Session on Automation, Protection, Reliability and Voltage Engineering of Power Distribution Systems with DER – Joint activity of all Distribution Subcommittee Working Groups
 - Moderator of Industry Experiences and Trends in Grid Modernization
 - Panelist of Panel Session on Current R&D in Photovoltaics: Technology and Grid Integration
 - Panelist of Panel Session on Engineering and Planning - Energy Storage Roadmap
 - Panelist of Panel Session on Distribution Planning Under Uncertainties

VICE CHAIR REPORT –

Vacant position - see Chair Report.

WORKING GROUP REPORTS

DISTRIBUTION RELIABILITY – Val Werner, Chair

Tuesday & Wednesday, July 19-20, 2016

Val Werner, chair called the WG meeting to order. Vice chair and sec; attendance was by as many as 44 individuals however at its peak approximately 36 were present. The sign-in sheet was circulated.

Note: All presentations are available on the DRWG website <http://grouper.ieee.org/groups/td/dist/sd/>

Approval of July 19-20, 2016 General Meeting WG Meeting Minutes

Introductions

Cost of Power Interruptions Update: Joe Eto

Distribution data analysis and benchmarking task force met at the distribution working group on January 10 and 11th where it reviewed work and have been ongoing in the areas parking on the cost of unreliability as measured through the Lawrence Berkeley national Lab as well as discussion around the update to the value of service calculator.

EPRI Outage Data for Grid Resiliency: Sal Martino

Sal shared the findings of the survey EPRI performed and is interested in furthering the discussion about more granular information about outages that might be a model for companies to consider. After much conversation it was recommended this work would be best served by multiple webinars to address what data companies already collect (such as sub-cause code data, damage locations and other such facts that inform the investigative and failure analysis that companies perform. Those conference calls are to be scheduled and results shared at the next face to face meeting.

Data Analysis & Benchmarking Task Force: Heide Caswell

The Data Analysis task force reviewed the 2017 benchmark process and discussed means to segment best reliability from transmission reliability. The goal is to request data by February 28 with a web conference to review the process in late January.

The task force also accepted suggestions to consider collecting data for a parallel activity in which more sharing of results and practices would occur (after much discussion about whether the goal of the annual benchmark should be encumbered with this data, particularly since many organizations are less willing to provide the data when its purpose is more broad reaching. Nonetheless, a motion to perform such benchmarking was made and carried. The motion read “To create a separate benchmarking survey stating that the data and results will be used for comparative analysis with a statement that the data might be able to be used to identify the utility who supplied the data.” Finally, review of overhead versus underground performance was contrasted against SAIDI and SAIFI. Minor edits to the graphs (which was in the benchmarking presentation) were requested.

1366 Task Force: John McDaniel Chair

General discussion about the standard was undertaken. No substantial input has yet been received to be incorporated into the next revision.

1782 Task Force: Val Werner Chair

Sal Martino and EPRI is working with Val Werner and DRWG members to jointly come up with Subcategories to the existing 10 that already exist in 1782.

Practices Presentation

Distribution Reliability Tools: Tyler Jones

Presentation to be shared. PacifiCorp implemented an automated outage management system beginning in 2001, which over the past years has built a foundation of information on which reliability analysis can be performed. In order to support that analysis the company has also devised means of visualizing data which has been beneficial to engineering and operations.

DRWG Presentations Wanted

Anyone interested in making a presentation (limit 30 minutes or less) should send the Title, Presenter, Duration, and 1-3 line description to v.werner@ieee.org at least two months before the meeting at which you want to present. The topics below were suggested.

Topics Not Yet Presented:

1. Multispeak interoperability standard being talked about (Tony Thomas)
2. Dashboard usage (no specific speaker identified)

Panel discussions

Volunteers will be requested, one topic of which that was suggested was AMI and its impact on reliability. Another set of topics possible were: reliability issues, rural versus suburban, etc., regional reliability

Roundtable Discussion

Limited roundtable occurred

Regulatory Update

Send regulatory updated to Heide Caswell.

Adjourned.

SWITCHING AND OVERCURRENT PROTECTION – Fred Friend, Chair

1. Chair Fred Friend (fafriend@aep.com) called the meeting to order at 1:00 pm with 22 participants present and introductions were made.
2. The Boston, MA, July 19, 2016 meeting minutes were reviewed and approved without comment.
3. The IEEE required slides for working Groups were presented and no conflicts were brought forth.

4. The WG reviewed Draft 3.3 of P1806 Guide for Reliability Based Placement of Overhead and Underground Switching and Overcurrent Protection Equipment Up to and Including 38 kV with the following review/ comments/ assignments (Draft 3.5 Rev B):
 - Reviewed Lee Taylor revisions with minor edits (Sections 10.5, 10.6, and 13)
 - Heide Caswell new contribution. Numerous comments and minor edits. (Sections 4.6 and 5.0)
 - Joe Viglietta new contribution. Needs to be coordinated with Heide's contribution.
 - Review content flow/ missing content
 - Need consistency in diagrams. Fuse saving??
 - New assignments
 - Redraw figures: Brett Efaw, Idaho Power (visio or powerpoint?)
 - Small editorial team was identified to edit the guide:

Fred Friend	Casey Thompson
Joe Viglietta	Tyler Jones
Heide Caswell	Brett Efaw
Dave Gilmer	Julio Romero Aguero
Mark Murray	Larry Conrad
 - Due by March 31, 2017
 - Chair will copy into IEEE format
 - Finalize draft at summer meeting / Ballot Fall 2017
5. New business
 - Ideas were discussed for future panel sessions, including joint session with the Reliability Working Group. Mani Venkata may be able to present on a Navy Yard project at the 2017 GM and/ or the 2018 T&D Conference and Expo.
6. Roundtable (no time available)
7. Announcements
 - Next Meeting: July 16 – 20, 2017, Chicago, IL
 - Sheraton Chicago Hotel & Towers
8. Adjourned

Web Site: <http://grouper.ieee.org/groups/td/dist/sop/>

SMART DISTRIBUTION – Larry Clark, Chair

Larry Clark called the meeting to order at 8:00 am CST on January 9, 2017 in Bissonet and welcomed the Group that included 47 representatives of utilities, vendors, and academic institutes. The SDWG leadership, Larry Clark-Chair, Bob Uluski-Vice Chair and Fred Friend-Secretary, were introduced. Larry reviewed the IEEE policies on patents, copyrights, etc. The minutes of the last meeting (Boston, MA, July 2016) were discussed including online availability and were subsequently approved unanimously.

Larry reported that Mani Venkata, chair of the DMS DA Award selection committee, is accepting nominations for the 2017 award. Mani briefly reviewed the nomination process. The Nomination deadline for the 2017 award is January 31, 2017. Nomination and the supporting letters should be submitted to Mani Venkata by the nominator by the deadline through email (mani.venkata@ge.com) with the subject of the email message being "2017 IEEE PES Douglas M. Staszkesky Distribution Automation Award - Nomination".

The Smart Distribution Working Group co-sponsors 2 invited panel sessions for the IEEE PES 2017 GM in Chicago, IL. Session 1 is 'Protection design for Micro Grids', Chair: Georges Simard and Nouredine

Hadjsaid [co-sponsored by Distribution SC within T&D TC]. Session 2 'Distribution planning under uncertainties', Chair: Georges Simard and Nouredine Hadjsaid [co-sponsored by SDOP SC within PSOPE TC].

Larry Clark reviewed the requirements for the development of an invited panel proposal. For the IEEE PES 2018 GM, invited panel proposals need to be submitted during 4th quarter 2017. The proposal is to include the title, description (150 words maximum) and the moderator with the list of 4 panelists for the invited panel proposal.

Shay Bahramirad and Aleksii Paaso updated the progress of the P1854 Project for the Smart Distribution Applications Guide. The development of the guide was completed in December 2016 and was submitted to the SDWG Voting Members for review and vetting by the SDWG Voting Members. The SDWG vetting vote count was 17 Approved, 2 Do Not Approve and 2 Abstain. SDWG leadership and the Guide Editorial staff agreed to review and reconcile the comments from the 2 Do Not Approve votes. This is being done to achieve 100% approval from the SDWG vetting vote process. Upon achieving final SDWG approval from the voting members, the guide is to be submitted to the IEEE – Standards Association.

Larry Clark and Bob Uluski reported that the DMS Task Force has been promoted to working group status. The DMS WG is joining the Distribution System Operations Planning (DSOP) Subcommittee. DSOP reports to the Power System Operation, Planning and Economics (PSOPE) Technical Committee. The DMS Working Group begins activity at 2017 GM in Chicago. The DMS WG scope includes DMS/SCADA Systems in Distribution System Control Centers, Distribution systems operation and planning. Integration of DMS with Outage Management Systems and Interface with Business IT Systems and AMI Systems. Bob Uluski presented the 5th Annual DMS "state of the industry" survey results.

The changing SDWG Scope was reviewed as result of the moving of DMS to the DSOP Subcommittee. The following bulleted list of tasks was presented for the new SDWG Scope:

1. Distribution Automation focus along Distribution feeder
 - a. Distribution Line devices to be automated
 - b. Automation techniques, i.e. package versus assembly
 - c. Line sensing devices and techniques
 - d. Number of automated devices per feeder
 - e. Vendor solutions/offerings
 - f. Utility needs and assemblies
 - g. Emerging technologies for the automation of devices along the distribution feeder
 - h. Coordination of overlapping activities between SDWG, DMSWG and VoltVar Task Force.
2. Operations and Planning topics moved to new DMS Working Group

As a consequence of forming the new DMS Working Group, Bob Uluski has resigned as vice chair of the SDWG in lieu of interim appointment as chair of the DMS Working Group. The plan is to elect a new vice chair by email vote in preparation for the 2017 GM in Chicago. Nominations or self-nominations are to be submitted to Larry Clark and Fred Friend by February 15.

The next SDWG meeting is at 2017 IEEE PES GM in Chicago, IL on July 16-20, 2017.

Additional information available at: <http://grouper.ieee.org/groups/td/dist/da/>

Volt/VAR TF – Larry Conrad, Chair

Larry Conrad, Chair of the VVTF, called the meeting to order at 8:00 AM CST on January 10, 2017 in room Galerie 5 of the New Orleans Marriott and welcomed the group. 24 representatives of utilities, vendors, research and academic institutes were in attendance.

Larry reviewed the IEEE policies on patents, copyrights, etc. He stressed the importance of adhering to these policies as VVTF members review the draft of the P1885 VVO M&V Guide. There were no issues or concerns raised or reported. Meeting minutes from July 2016 were reviewed and approved.

Recommendations for new officers and P1885 lead were presented and approved, as shown below. Officer selection was based on willingness to contribute and past participation in the group.

Larry Conrad – Chair
Mike Simms – Vice Chair
John Sell – Secretary
Suresh Gautam – P1885 Lead

A review of the P1885 PAR led to a discussion of the document contents to date and a determination of the focus of the final document. A question was raised as to whether the method can be separated from the results. The group consensus was that the methodology used to achieve VVC benefits should not be the focus of the document, only the measurement and verification of those benefits.

Larry Conrad presented a presentation entitled “Basic C84.1 Considerations for Distributed Resources”. HECO experience with high penetration of distribution-connected resources has shown that previous assumptions of voltage drop from source to load are no longer valid, and voltage rise and circuit backflow and inverter shutdown can occur. Discussions were held on possible recommendations for input to C84.1 modifications to include consideration of distributed resources on voltage profiles.

Aleksi Paaso of ComEd shared project plans for implementing CVR running 24x7 on 3200 feeders. Goal is 2.5% demand reduction from CVR and feeder upgrades.

Mike Simms of Duke Energy discussed their experience with running DMS-based VVC-CVR on ~500 circuits in Ohio and plans to implement on ~500 circuits in Indiana. Approximately 65% of circuits have CVR in effect at any given time. Largest issue is dependency on power flow results, which can be impacted by RTU failures and model errors.

The P1885 contributors agreed to meet after the meeting to continue discussions on completing the draft. The next meeting of the VVTF will be held at the PES General Meeting in Chicago in July, 2017. The meeting was adjourned at 9:23 AM.

DISTRIBUTED RESOURCES INTEGRATION – Julio Romero- Aguero, Chair

~~ Not Yet Received~~

STRAY AND CONTACT VOLTAGE WORKING GROUP – Matt Norwalk, Chair

The Stray and Contact Voltage Working Group met at the 2017 IEEE PES Joint Technical Committee Meeting on the afternoon of Monday January 9th at the New Orleans Marriott. There were approximately 25 people in attendance. The officers for this meeting were Daniel Chen, Vice-Chair and Scott Kruse, Secretary.

Following review and approval of the Boston and November Skype meeting minutes, Mark Voigtsberger from UTGIS provided a presentation on improving the quality of manual voltage surveys. The group engaged in a lively discussion on the existing content of the guide as it related to Mark's presentation and it was decided that more information was needed on a measurement device discussed during this presentation. The next presentation was by Anthony Cedrone from ConEd on an urban case study for the guide. The group engaged in a discussion on the amount of information to be included in case studies and Anthony agreed to send out a template to the working group members for submissions within 3 weeks.

Stu Hannebuth then presented the draft table of contents that was finalized during our Skype meeting in November. The group voted unanimously to accept the new table of contents which reorganizes the guide in a more linear format. Stu then proposed the need for a new definition for voltage on an energized object that is not part of the electric system to avoid categorizing the problem as either stray or contact voltage before an investigation is performed. The group brainstormed possible terms and voted on "Exception Voltage".

The Chair then solicited Section Leads to begin the process of revising the guide at which time we broke into groups to prioritize the work in each section, including gaps in the existing content. The Section Leads then reported to the group their findings.

The Chair will work on posting the draft onto the IEEE iMeet Group Website which will be reorganized to the new table of contents. A web meeting will be setup in between the GM to have the Section Leads report on work on the document.

The meeting was adjourned at approximately 4:15pm.

A 3 hour time slot is requested for the General Meeting in Chicago.

LIAISON REPORTS

Insulated Conductors

No report is available

Power System Communications

No report is available.

Power Systems Instrumentation and Measurement (PSIM)

No report is available.

Power System Relaying Committee – Fred Friend

Meeting minutes can be viewed from the following link:

<http://www.pes-psrc.org/minutes/Aminutes.html>

Transformers Committee – Fred Friend

The latest Transformer Committee information is included in the publication: Liaison Report Transformers Jul2016 posted on the website.

STANDARDS

NESC – Rusty Soderberg

The 2017 National Electrical Safety Code was issued August 1, 2016, along with a new handbook. States that automatically adopt the Code will adopt it in February per Code language. The next Code milestone will be July 15, 2018, this is the day change proposals (CP's) are due for the 2022 Code.

The "Working Group on the NESC," a part of the Overhead Lines Subcommittee, met on Monday January, 9. Topics discussed included resiliency, work rules, prioritization of CP's, and the formation of task forces to address important NESC subjects. One of the more important items the NESC will be addressing is how new emerging disruptive technologies such as solar, microgrids, and communications antennas will be addressed. These are items not usually associated with electric networks in the past and therefore they are changing the way we look at the Code.

New NESC leadership was appointed on September 1, 2016, with Nelson Bingel (Osiose Utilities Services) assuming the role as chair, and Danna Liebhaber (Bonneville Power Administration) assuming the role as vice-chair.

One new Massive Open Online Course (MOOC) on "An Overview of the NESC" was launched in November with approximately 2500 participants enrolled. Additional E-Learning courses relating to different sections of the code are under development and will be available in the near future.

An NESC mobile app has been developed and will be available soon. The NESC website has also been redesigned. (<http://standards.ieee.org/about/nesc/index.html>)

An NESC Workshop was held on October 18-19, 2016 in San Antonio, TX, to provide a review of the 2017 changes, and kick off the NESC 2022 edition, with 132 attendees.

See <http://standards.ieee.org/events/nesc-workshop.html> for presentations and photos. A Subcommittee 5 Workshop was held the day after the workshop with invited experts to present data on wind and ice. John Miner presented a keynote at the NESC Workshop, *Sustaining the NESC Through Strategic Change*.

(http://standards.ieee.org/events/2016_nesc_presentations/nesc_workshop_keynote_john_miner.pdf)

Nelson Bingel and Michael Johnston co-presented a paper at the NESC Workshop, *The NEC and NESC: Partners for a Safer Tomorrow*. (http://standards.ieee.org/about/nesc/nec_nesc_case_study.pdf). An

NEC-NESC road map to develop the intersections, overlaps, and gaps for both codes is currently under development and will be shared with the leaderships of both codes so that appropriate working groups can be formed to address resulting items.

PANEL SESSIONS

Panel sessions for future meetings:

Proposed joint session with Distributed Resource Integration WG. Julio Romero Agüero will provide framework

Proposed joint session with Smart Distribution WG, Georges Simard will provide framework

Papers are due in November for 2017 General Meeting

PRESENTATIONS

Julio:

Industry changes are revolving around distributed resources. We need to collaborate between Working Groups(WG). One panel would be adding automation to distribution feeders for the 2017 general meeting. Should involve the following WGs:

- SMART
- Distribution Reliability
- Protection
- DRI
- Stray & Contact

2017 PES General Meeting

- Protection of Micro Grids
- DR Management Systems
- Microgrids

Additional panel sessions are available for the 2017 General Meeting.
Make plans for 2018 April T&D meeting

There was a suggestion to have Panel Sessions with an included lunch between regular meetings and/or panel sessions.

ISGT – Needs more panelists for April meeting.

NEW BUSINESS / ROUNDTABLE

1. P1656 Wildlife Protection Standard – coming up for renewal, Karen Riley was last Chair. Maybe someone from NEETRAC would be interested in chairing...
2. Discussion ensued about whether the DSC is involved with hardware or more into usage and analysis.
3. Dave Gilmer: Discussed why PQ should have remained in the DSC. Described the “balkanization” of distribution working groups. Julio called for PQ liaison volunteers.
4. Tyler Jones asked if any study of solar car general DR on reliability?..
 - a. Julio said it may be good for some papers out of DRI or DRWG.
5. Send room requests to Julio by March!!

Motion to Adjourn: Dave Gilmer, seconded by John McDaniel..

PAR Number	Title	Working Group	Chair
P1695	Draft Guide to Understanding, Diagnosing and Mitigating Stray and Contact Voltage	Stray and Contact Voltage WG	Matt Norwalk
P1782	Guide for Collecting, Categorizing and Utilization of Information Related to Electric Power Distribution Interruption Events	Distribution Reliability WG	Val Werner
P1854	Guide for Smart Distribution Applications	Smart Distribution WG	Larry Clark
P1885	Guide for Assessing, Measuring and Verifying Volt-Var Control Optimization on Distribution Systems	Smart Distribution WG	Larry Clark
P1806	Guide for Reliability Based Placement of Overhead and Underground Switching and Overcurrent Protection Equipment	Switching and Overcurrent Protection WG	Fred Friend

Appendix: Current Membership Roster

Chair: Julio Romero Aguero, Raleigh, NC

Vice Chair: vacant

Secretary: Val Werner, WI

Beckwith, T., Largo, FL
Bouford, J., Augusta, ME
Caswell, H., Portland, OR
Clark, L., Birmingham, AL
Cole, J., Bozeman, MT
Conrad, L., Plainfield, IN
Flaherty, A., Everett, WA
Friend, F., Columbus, OH
Gilmer, D., Kerrville, TX
Hayes, H., St Louis, MO
Jones, T., Portland, OR
Lambert, F., Forest Park, GA
McDaniel, J., North Syracuse, NY
Miller, L., Kennewick, WA
Norwalk, M., Fullerton, CA
Robinson, R., Topeka, KS
Romero Aguero, J., Raleigh, NC
Rumrill, R., Burlingame, CA
Sabin, D., Beverly, MA

Saint, B., Granby, CO

Smith, J., Phoenix, AZ

Soderberg, R., Jackson, MI

Venkata, M., Redmond, WA

Viglietta, J., Philadelphia, PA

Ward, D., Richmond, VA

Werner, V., Milwaukee, WI

DRAFT