

**IEEE Distribution Subcommittee
Meeting Minutes
July 30, 2014
National Harbor, MD**

ADMINISTRATIVE

Chair John McDaniel called the IEEE Distribution Subcommittee meeting to order at 1:30 p.m. with 15 members and 4 guests present. Next year Julio Romero Aguero will be Chair of this Subcommittee and Val Werner will be Secretary. We plan to fill the Vice Chair position by January. The notes from the January 2014 meeting were approved with no revisions.

CHAIR REPORT – John McDaniel, *Distribution Subcommittee*

Technical Council/Technical Sessions has limited the number of conference papers that will be accepted. This was done due to the volume of conference papers that are now being submitted. Another part was the quality, or lack of quality in the papers being submitted.

Tech Council has also limited the number of panel sessions that each Committee can present. For the T&D Committee, the quota is 16 two hour panels. For the 2014 General Meeting, all of our seven panels were accepted, due in part to the lack of panels from other subcommittees. We will need to keep this in mind in the future with our panel proposals. The reason is the number of available meeting rooms.

There are also a number of initiatives coming from Tech Council. One that will directly affect us is a proposed restructuring of the PES Committees. A Task Force looking at this restructuring has just finished gathering each committee's scope and organization. They will be mapping all of the scopes and looking for overlaps. They spent this morning starting to layout this mapping. They will then lay out a proposed restructuring and the plan is to have it to the PES Governing Board by January of 2105. The other initiatives that they are looking at is to increase the number of working meetings abroad, increasing international participation in Working Groups, looking at utilizing WebEx at meetings and increasing Utility participation at meetings.

Excellence in Distribution Engineering Award: Dan Ward has requested that there is a need for additional nominations for this award. There was only one new nomination for this year's award. Also, there are only a limited of outstanding nominations that are available for balloting. So please take the time to think about nominating some whom you believe is worthy of this award. Information on this award, along with the nomination form can be found at:
<http://grouper.ieee.org/groups/td/dist/distaward.html#DistExcel>

VICE CHAIR REPORT – Julio Romero Aguero, *Distribution Subcommittee*

I have been serving 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. I have been involving several of our distribution subcommittee members in these reviews, as well as other colleagues. I want to specially thank Dan Ward from Dominion, who has been a frequent and reliable reviewer of distribution papers.

I have been serving as Editor of IEEE Transactions on Smart Grid (TSG), assisting the Editor-in-Chief, Prof. Mohammad Shahidehpour from Illinois Institute of Technology, in the review of papers pertaining to smart grid applications in distribution. Yesterday I participated in the Editorial Board meeting for TSG and Prof. Shahidehpour informed that this is now the transaction with the highest impact factor. Several new Editors have been appointed and six issues will be published every year. Prof. Shahidehpour also informed that he is approaching the completion of his term as Editor-in-Chief, he will keep the Editors posted about this.

WORKING GROUP REPORTS

DISTRIBUTION RELIABILITY – Rodney Robinson, Chair

Rodney Robinson, chair called the WG meeting to order at 1:30 PM with 55 attendees. The January 2014 minutes reviewed and accepted with some modifications.

Note: All presentations given at the Work Group and Task Force meetings are available on the WG and TF websites.

Task Force on Predictive Reliability – Julio Romero-Aguero/Le Xu

Chair Julio Romero Aguero stated that Le Xu could not be present because he was at a panel session which was happening at the same time. There were two presentations at this meeting:

New EIA Data Collections and Relevance to System Reliability

Stan Kaplan(SK), Director, Office of Electric, Renewable, & Uranium Statistics

Update of Statistical Analysis of Multi-year Trends in Reported Reliability

Joe Eto, Lawrence Berkeley National Laboratory

Task Force on Reliability Indices – John McDaniel

The next PAR will need to be taken out in 2018.

Task Force on Reliability Reporting – Rodney Robinson/Val Werner

Rodney gave an update on the progress of the 1782 guide. He said there was one more chart to fix and then the guide would be available in about two weeks to a month.

Task Force on Reliability Tutorial – Val Werner

Val gave a recapped of how the Reliability Tutorial went at the T&D Conference in April 2014. He said it was well attended and well received. There were many positive comments.

Tools Task Force – Ian Hoogendam

There was no report submitted.

Task Force on Data Analysis and Benchmarking – Heide Caswell

Benchmarking Results 2014 for 2013 data are available on the Working Group website. There were several presentations during this meeting:

Analysis of Alternative Methods for Identifying Major Events Days

Joe Eto – Lawrence Berkeley National Laboratory

The European Benchmarking Report on Quality of Supply

Math BOLLEN, Luleå University of Technology, Skellefteå, Sweden

Werner FRIEDL, E-Control / CEER (energy regulator), Vienna, Austria /

Brussels, Belgium

Municipal Reliability Data

Alex Hoffman - APPA

NRECA Benchmarking

Tony Thomas - NRECA

DA performance @ We Energies

Val Werner – We Energies

Mid Circuit Recloser Benefits at Westar Energy

Susan Quinn – Westar Energy

CAIDI Reliability Performance @ PacifiCorp

Heide Caswell – PacifiCorp

There are three panel presentations planned. John McDaniel requested a description of the panel sessions, no more than 150 words, be sent to him.

SWITCHING AND OVERCURRENT PROTECTION – Fred Friend, Chair

Chair Fred Friend called the meeting to order at 10:00 AM with **10** participants present. The IEEE slides for Working Groups were presented. The January 2014 meeting minutes were reviewed and approved without comment.

The requirements for the PAR were reviewed and revised, as follows:

P1806 GUIDE FOR RELIABILITY BASED PLACEMENT OF OVERHEAD AND UNDERGROUND SWITCHING AND OVERCURRENT PROTECTION EQUIPMENT

Scope – To provide guidance for the placement of switching and overcurrent protection devices on non-network distribution circuits through 35 kV.

Purpose – This guide provides means and methodologies for proper placement of switches and protective devices to achieve the desired performance characteristics and reliability for non-network distribution circuits, including feeder and branch line equipment, with operating voltages through 35 kV. Drivers for device placement, such as reliability and operational considerations are identified. Various types of switching and overcurrent equipment are covered such as: manual switches, automated switches, reclosers, sectionalizers, and fuses. Impacts on reliability and device placement are

addressed for factors such as fault rate, interruption duration, exposure miles, customers affected and distribution automation.

Need for the Project: The guide will provide recommendations on methodology for identifying placement and quantities of devices on distribution circuits to achieve desired reliability and operational objectives.

Stakeholders for the Standard: Users of the guide include distribution engineers and others engaged in design and operation of distribution systems employing distribution automation and overcurrent protection equipment.

The revised PAR (P1806) was unanimously accepted by the eligible voters attending for submission. A discussion ensued about including in the guide a more detailed explanation of the basic analytical steps to determine reliability placement of devices.

Casey Thomson gave a presentation titled, “Self-Healing Network (Centralized Restoration Gateway)” describing a new system at Georgia Power that provides automatic isolation of faulted sections of feeders and restoration of supply to unfaulted sections. The system also provides automated return of feeders to normal configuration upon command from an operator.

This Working Group will be coordinating with the Reliability Working Group on a joint panel session for the 2015 General Meeting.

SMART DISTRIBUTION – Larry Clark, Chair

Larry Clark welcomed the Group that included 63 representatives of utilities, vendors, and academic institutes. Larry briefly reviewed the IEEE policies on patents, copyrights, etc. The minutes of the last meeting (New Orleans, January 2014) were briefly discussed including online availability and were subsequently approved unanimously.

Larry Clark on behalf of Shay Bahramirad updated the P1854-Project and the need for additional volunteers. The PAR expiration date is 31-Dec-2016. The guide sections update included a request for additional assistance with the development of sections for the Efficiency improvement application, the Phase balancing for hosting capacity and the Outage Management.

The SD Working group sponsored 3 invited panel sessions at the 2014 GM in Washington, DC. The invited panel session ‘Smart Distribution Applications’ was moved to the IEEE PES 2015 ISGT meeting on February 17-20, 2015.

Anil Pahwa, chair of the DMS DA Award selection committee, reported that Larry Clark is the recipient of the 2014 award. The Nomination deadline for the 2015 award is January 1, 2015. Nomination and the supporting letters should be submitted to Anil Pahwa by the nominator by the deadline through email (Pahwa@ksu.edu) with subject ‘Douglas M. Staszkesky DA Award Nomination’.

Larry Clark reviewed the requirements for development of an invited panel proposal. For the IEEE PES 2015 GM, invited panel proposals need to be submitted during 4th quarter 2014 in response to the Call for Papers for the 2015 GM. The proposal is to include the title and the moderator for the invited panel proposal.

The next SDWG meeting is at 2015 IEEE PES JTCM in California at Hyatt Regency Orange County in Garden Grove CA on January 12-15, 2015.

DMS Task Force (DMS TF) – Bob Uluski

Bob Uluski welcomed the group which included 26 representatives of utilities, vendors, and academic institutes. Minutes of the last meeting (New Orleans, January 2014) were accepted without amendment.

The group heard presentations on DMS “State of the Industry” Survey results (Bob Uluski) - Discussion of survey results and recommended follow-up actions and on Distribution State Estimation – overview of GM panel sessions on topic by Prof G A Taylor (Gary) Director - Brunel Institute of Power Systems. Copies of these presentations will be posted to the website.

Bob Uluski led roundtable discussion of SD/DMS trends and projects.

The next DMS TF meeting is at 2015 IEEE PES JTCM in California at Hyatt Regency Orange County in Garden Grove CA on January 12-15, 2015.

Volt/VAR Control & Optimization (VVTF) Task Force – Larry Conrad

Larry Conrad welcomed the group which included 26 representatives of utilities, vendors, and academic institutes. Larry briefly reviewed the IEEE policies on patents, copyrights, etc. Minutes of the last meeting (New Orleans, January 2014) were accepted without amendment.

Ron Willoughby did a presentation on DOE national investigation of CVR activities project overview, which covered project participation, data gathering and preliminary findings. The group had a good discussion on the voltage control terminologies and the project findings. The presentation will be on the task force website after Ron checks with DOE.

Bob Uluski provided a progress report on P1885/D01 – Draft Guide for Assessing, Measuring and Verifying Volt-Var Control Optimization on Distribution Systems. Bob proposed to refocus the ongoing effort to the approved PAR in order to meet the expected date of submission of Draft to the IEEE-SA for initial sponsor ballot (July 30, 2016) and the projected completion date for submittal to RevCom (Jan 23, 2017). The group discussed the scope and level of details of the draft. Bob asked for volunteers for key sections on predicting benefits. The draft document is expected to be ready for internal review no later than mid-December, 2014.

On behalf of Murty Yalla, Bob Uluski provided a status report of the proposed tutorial on Volt-Var Optimization at the 2015 general meeting in Denver. The tutorials will cover basic

principles, approaches, challenges, results as well as case studies from GA Power, BC Hydro, and Duke Energy. The tutorial currently has 9 contributors.

Members discussed and agreed that the term “control” should be removed from the current name of the PAR, Le Xu will find out the IEEE rules on authorized voters for PAR name change and will request a change afterwards.

Larry Conrad provided an update on MISO approved voltage reduction protocol.

During the roundtable discussion, Mike Simms gave an update on the continuation of the IVVC effort in Duke Energy, Bob Uluski, Larry Clark and Jeremy Wilson introduced recent CVR consulting projects and events. Larry Conrad and the group discussed the concern of CVR on voltage collapse from a transmission planner perspective.

The next VVTF meeting is at 2015 IEEE PES JTCM in California at Hyatt Regency Orange County in Garden Grove CA on January 12-15, 2015.

DISTRIBUTED RESOURCES INTEGRATION – Tom McDermott, Chair

Julio Romero Aguero (Vice Chair) chaired the session on behalf of Tom McDermott (Chair). There were 22 attendees. Julio briefly introduced the “Participants, patents, and duty to inform” and other guidelines for IEEE WG meetings, reviewed the agenda, and received agreement to proceed per the agenda. The minutes of the last session were reviewed and approved. Julio committed on behalf of the WG board to provide the minutes and the agenda with enough anticipation for attendees to review them and suggest changes. Meeting minutes and agendas will be posted.

There was a presentation by Dexter Lewis (Southern Company) on Experiences with DG integration at Southern Company. There was a report on IEEE P2030.7 Standard for Specification of Microgrid Controllers by Geza Joos, looking for interest from the group to contribute to the Standard.

The Group was asked to review the latest posted IEEE P1547.8, Draft 6.0a (February 2014), “Draft Recommended Practice for Establishing Methods and Procedures that Provide Supplemental Support for Implementation Strategies for Expanded Use of IEEE Standard 1547” posted at http://grouper.ieee.org/groups/scc21/1547.8/private/1547.8_index.html
username: p1547.8 password: conn2EPS

This will be sent out to ballot.

The Group discussed potential Panel Sessions for the 2015 General Meeting. Jim Reilly agreed to present in Microgrid Panel Session and Bob Arritt agreed to chair panel session on non-Microgrid panel related topics i.e. DG interconnection.

VOLTAGES IN PRIVATELY AND PUBLICLY ACCESSIBLE LOCATIONS – Chuck DeNardo, Chair

The Stray & Contact Voltage Working Group met on Wednesday July 30, from 1:30PM to 4:30PM. The minutes of the January 2014 meeting were approved.

We discussed that P1695 Project Authorization was set to expire on December 31st of this year. The working group voted to request an extension and discussed a modification of the existing PAR. Both the extension and the modification will be submitted for IEEE approval. The modified PAR will expire on December 31, 2016.

We are now charged with the creation of a Full Service Guide (no longer trial use) to be titled “Guide to Understanding, Diagnosing and Mitigating Stray and Contact Voltage”. The old title “Trial Use Guide for Assessing Voltages at Publicly and Privately Accessible Locations” has been dropped. Also, the Editorial Task Force is nearing completion of its assigned task to incorporate the latest round of comments and submit the draft guide for mandatory editorial review. We hope to accomplish this during November.

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

The next meeting will be at the Hyatt at Pier 66 in Fort Lauderdale, FL 11-15 May 2014.

Complete meeting minutes are at the following link: <http://www.pes-psrc.org/Aminutes.html>

Working Group C2, chaired by Alex Apostolov, is nearing completion of a report to the PSRC to identify the functions and data available in Protective Relaying Devices used at different functional levels and different applications within a Smart Grid.

Working Group C4, chaired by Galina Antonova, is developing a guide C37.244 for the performance, functional, and information communication needs of Phasor Data Concentrators for power system protection, control, monitoring, and information management. The Guide will include system needs for PDC applications, configuration, and testing procedures.

Working Group D26, chaired by Joe Mooney, is revising and updating C37.114 –Guide for Determining Fault Location on AC Transmission and Distribution Lines with an expected completion by the end of 2014.

Working Group D28, chaired by Brian Boysen, is revising and updating C37.230 – Guide for Protective Relay Applications to Distribution Lines.

Working Group I22, chaired by Bob Beresh, is preparing a report to the PSRC titled “End of Life Assessment for P&C Devices for determining the end of useful life for protection, control, and monitoring devices.

Link to all PSRC publications: http://www.pes-psrc.org/Reports/Apublications_new_format.htm

SCC 21 – Bob Arritt

Status of 1547 Series Working Groups

- a. 1547 (base standard) has a PAR for full revision
 - i. had first two meetings April 23-24 and June 24-25 in Las Vegas
 - ii. November meeting planned for NERC headquarters in Atlanta
 - iii. February meeting planned for NRECA headquarters in Arlington, VA
- b. P1547a (amendment for voltage regulation and expanded voltage/frequency trip settings) has been approved and published
- c. P1547.1a (changes to test regimen supporting P1547a), last meeting was June 24-25 in Las Vegas.
- d. P1547.8 (recommended practice for expanded use) preparing draft 7 for ballot
- e. See <http://grouper.ieee.org/groups/scc21/> for logistics. You should attend SCC 21 meetings if you wish to influence the standards development process. You should become an IEEE Standards Association member if you wish to vote on standards.

STANDARDS

NESC – Rusty Soderberg

2017 NESC timeline:

September 1, 2014: Preprint of change proposals will be available on-line at

<http://standards.ieee.org/about/nesc/>. The availability of the preprint opens the comment period on the 2017 change proposals. Distribution Subcommittee members should review and comment as they see necessary. The votes were very close on some of the change proposals so your comments will make a difference.

May 1, 2015: Final date to submit comments on the change proposals.

Change proposals:

There are 751 total change proposals. Most of the change proposals are in the clearance section and in the strength and loading section.

The Working Group on TP&C Changes to the NESC met this morning Wednesday, July 30, 2014. Each Subcommittee Chairperson or designate discussed the change proposals in their respective sections of the NESC. Each subcommittee was represented, Subcommittee 2 Grounding Methods, Subcommittee 3 Electric Supply Stations, Subcommittee 4 Overhead Lines - Clearances, Subcommittee 5 Overhead Lines - Strength and Loading, Subcommittee 7 Underground Lines, and Subcommittee 8 Work Rules. I discussed each of the NESC subcommittee presentations during the distribution subcommittee meeting including explanation of the following change proposals:

There is a change proposal to remove Grade N from the Code. My utility does not use Grade N construction, but I would be interested to know what utilities do use it, and to hear your comments on these proposed change proposals.

There are a few change proposals to eliminate the 60 foot exclusion in Rules 250 C and 250 D. The 60' exclusion allows most distribution poles to be exempt from certain loading analyses. I voted against the removal of this exclusion in the September 2013 change proposal meetings.

There is a change proposal to eliminate the k factor (the constant listed in Table 251-1) in the Code. This may affect companies sag and tension tables (more work for the utilities) with no increase in safety. This proposal was voted down.

During the Subcommittee 5 meeting in September 2013 a proposal was made to make Grade B construction applicable not only when crossing a limited access highway, railroad, or navigable waterway, but also applicable to any lines running along these areas (if the line could fall into them). This would be a big change for distribution that is unwarranted. The voting on this was close, so please send in your comments after the preprint is issued on-line.

PANEL SESSIONS

Panel Sessions planned are:

- SPM 20156: Extreme Events – by the WG on Distribution Reliability
- SPM 2015: Protective Device Placement – joint by the WG on Distribution Reliability and WG on Switching and Overcurrent.
- SPM 2016 or 2016 T&D: Best Practices – Top Quartile Companies for Reliability – by the WG on Distribution Reliability
- SPM 2015 DG Interconnection – by WG on DRI

TUTORIAL

No tutorials are planned.

PRESENTATIONS

Presentations from this meeting and those from previous meetings are posted at the Distribution Subcommittee website:

<http://grouper.ieee.org/groups/td/dist/presentations/>

Appendix: Current Membership Roster

Chair: McDaniel, J., Syracuse, NY
Vice Chair: Romero Aguero, J., Raleigh, NC
Secretary: Tobin, E., Everett, WA

Bouford, J., Augusta, ME
Carroll, P., Milwaukee, WI
Carter, V., Boise, ID
Caswell, H., Portland, OR
Christie, R., Seattle, WA
Clark, L., Birmingham, AL
Cole, J., Bozeman, MT
Conrad, L., Plainfield, IN
Crudele, D., Ballstonspers, NY
Delmas, H., Montreal, QC
DeNardo, C., Milwaukee, WI
Fan, J., Duluth, GA
Friend, F., Columbus, OH
Gilmer, D., Craig, CO
Goodfellow, J., Redmond, WA
Hayes, H., St. Louis, MO
Hensel, D., Spring Arbor, MI
Hisayasu, R., Bellevue, WA
Holt, A., Kansas City, MO
Hoogendan, I., Portland, OR
Isom, M., Oklahoma City, OK
Lambert, F., Forest Park, GA
McDermott, T., Pittsburgh, PA

McGranaghan, M., Knoxville, TN
Miller, L., Knoxville, TN
Ortega, J., Oakbrook Terrace, IL
Pahwa, A., Manhattan, KS
Patterson, M., Boise, ID
Pierce, W., Bend, OR
Rafferty, M/, Jacksonville, FL
Rizy, T., Oak Ridge, TN
Robinson, R., Topeka, KS
Sabin, D., Beverly, MA
Saint, B., Arlington, VA
Simard, G., Montreal, QC, Canada
Smith, J., Phoenix, AZ
Soderberg, R., Jackson, MI
Taylor, L., Charlotte, NC
Thatcher, M., Kansas City, MO
Uluski, R.
Venkata, S.S., Oro Valley, AZ
Viglietta, J., Philadelphia, PA
Ward, D., Richmond, VA
Warren, C., Albany, NY
Werner, V., Milwaukee, WI
Xu, L., Raleigh, NC