IEEE Distribution Subcommittee
Draft Meeting Minutes
January 15, 2014
New Orleans, LA

ADMINISTRATIVE

Chair John McDaniel called the IEEE Distribution Subcommittee meeting to order at 1:30 p.m. with 20 members and 7 guests present. The notes from the July 2013 meeting were approved with 2 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. There is a Task Force looking at this restructuring. They have just finished gathering each committees' scopes and organizations. They will be mapping all of the scopes and looking for overlaps. They will then lay out a proposed restructuring and the plan is to have it to the PES Governing Board by January of 2015. 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*

No report is available

WORKING GROUP REPORTS

DISTRIBUTION RELIABILITY – Rodney Robinson, Chair
Rodney Robinson, chair called the WG meeting to order @ 3:00 PM with 45 attendees present. The 2013 General Meeting DRWG Minutes reviewed, revised and accepted with one correction.

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-Aruero/Le Xu
Chair Julio Romero Aguero gave a brief introduction on the Predictive Distribution Reliability Practice Survey Results. A Power Point presentation on the survey results was given by Co-Chair Le Xu.

After presentation, the Working Group (WG) was asked if there were any objections to posting the presentation on the website. Since the he only stipulation in the survey was that the participants would not be identified, the non-attributed results can be posted. After that clarification, the WG members had no objection.

The PRTF will hold a panel session at the 2014 General Meeting on current predictive reliability study practices in industry and their preparation for emerging smart distribution trend. They were looking for a fourth speaker and Ian Hoogendam volunteered.

In addition, the PRTF is preparing a white paper presenting the gap analysis between present reliability study practices and the requirements for smart distribution reliability analysis. Contact Le or Julio to pursue similar topics.

Task Force on Reliability Indices – John McDaniel
P1366-2012, "Guide for Electric Power Distribution Reliability Indices", was approved in May 2012 and will be good for 10 years. The next PAR will need to be taken out in 2018.

Task Force on Reliability Reporting – Rodney Robinson/Val Werner
Rodney Robinson gave the update. P1782, the "Guide for Collecting, Categorizing and Utilization of Information Related to Electric Power Distribution Interruption Events", was passed in balloting and approved. It will be available to Working Group member after the next Revcom meeting in March 2014.

Task Force on Reliability Tutorial – Val Werner
Val Werner gave the update. The tutorial titled "Understanding Distribution Service Reliability, Tracking Reliability, and Ways to Improve Your System Performance While Considering Costs" will be presented at the Transmission and Distribution Conference in Chicago on Monday, April 14, 2014 from 8:00 AM – 5:00 PM.

Tools Task Force – Ian Hoogendam
The focus will be on having a new benchmarking wizard in 2015 for the 2014 benchmarking. The TF will develop additional output to help utilities understand their data. A TF web meeting will be arranged.

Dave Lankutis gave a presentation on "Estimating the Cost of Outages".

Task Force on Data Analysis and Benchmarking – Heide Caswell
Heide Caswell gave a presentation on the benchmarking collection process including the Wizard used to collect the data. Several members will review the Wizard questions once Heide updates the slides based on the suggestions she received during the TF meeting.

Joe Eto gave a presentation on "Form EIA-86 1 Planned Revisions for 2014 Distribution Reliability Reporting. In a reply to a question, Joe stated he did not work for Energy Information Administration (EIA) but for the University of California, Berkley. The EIA forms must be reviewed every three years and any comments on the current forms must be submitted by January 23rd this year. Joe wanted three things brought to the DRWG meeting: the supply definition; suggestions of ranges of valid data that could be used for data checking; the need to be proactive in having EIA-861 filled out correctly. All EIA forms are due prior to April 30th and can be filled out on line.

A presentation titled "Preliminary Analysis of MEDs" was given by Joe Eto. In a brief introduction, Heide Caswell stated that the notion of log normal reliability data was questioned. A TF was formed and looked at the assumption of log normal distribution, then asked Joe Eto to take a more analytical look at it. The content of Joe's presentation is preliminary. There has been an assumption of an average of only two Major Event Days (MEDs) each year but the average number of MEDs was much higher at five to six in recent years. Comments during a discussion included: some utilities are applying MED incorrectly; improved data from AMI is now available; geographically wide spread utilities have more MEDs that geographically concentrated ones; automated systems are not taken into account. Proposed next steps:

- Test goodness of data
- For those utilities for which log-normal is not a good fit, use progressively fewer than 5 years of history to estimate beta, re-examining goodness of fit each time
- For those for which use of fewer years does not lead to fewer MEDs and does not lead to an acceptable fit, the utility should determine whether disaggregation of system leads to better conformity with the log-normal assumption
- Examine mixed-model approaches and alternate distributions; reassess goodness of fit

The final presentation was given by Ian Hoogendam on "Kolmogorov-Smirnov Normality Test". This test can be used to test normality of data. One tofive years of data was tested for all companies who allowed additional studies. Statisticians often pick a p-value $> .05$ to determine goodness of fit to the distribution. If the p-value is $< .05$, the distribution does not fit the assumed distribution. The findings were:

- Using 5 years does yield the highest p-value

- The largest percentage of utilities meet a p-value of > .05 using 1 year of data
- In general a higher p-value can be found if mean & standard deviation are varied for test distribution
- The average number of MEDs for utilities with a poor fit is higher than utilities with a good fit.

SWITCHING AND OVERCURRENT PROTECTION – Lee Taylor, Chair

Chair Lee Taylor was unable to attend, so Secretary Fred Friend called the meeting to order at 10:00 AM with 26 participants present. The Vancouver July 2013 meeting minutes were reviewed and approved without comment. At the request of the present Chair, a new Chair, Fred Friend, was approved by the Working Group. Joe Viglietta was approved by the working group as the new Secretary.

The PAR was withdrawn before it expired at the end of the year. John McDaniel will work with the new Chair to resubmit a revised PAR. The title, scope, purpose, need, and stakeholders were reviewed and revised, as follows:

DRAFT 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 criteria for placement of switching and overcurrent devices on the distribution system including feeder and branch line equipment. 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, exposure miles, customer density, and distribution automation. The net result is to provide means and methodologies for proper placement of switches and protective devices to achieve the desired performance characteristics and reliability for non-network distribution circuits through 35 kV.

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 reliability engineers and others engaged in design and operation of distribution systems employing distribution automation and overcurrent protection equipment.

A roundtable discussion then ensued on topics related to the Guide. The meeting adjourned at 11:30 am.

SMART DISTRIBUTION – Larry Clark, Chair

Larry Clark welcomed the Group that included 42 representatives of utilities, vendors, and academic institutes. The minutes of the last meeting (Vancouver, July 2013) were briefly discussed including online availability and were subsequently approved unanimously.

Shay Bahramirad reviewed the P1854-Project Timeline. The PAR expiration date is 31-Dec-2016. The number of PAR participants, scope and stakeholders were updated. The guide sections update included a request for additional assistance with the development of the Reliability section. Conference plans were reported to update the progress of the P1854 development. The end of April 2014 is targeted for the first round of the review process.

The SD Working group is sponsoring 4 invited panel sessions at the 2014 T&D Conference & Exhibition in Chicago and 4 invited panel sessions at the 2014 GM in Washington, DC. A tutorial on smart distribution systems has been approved for the 2014 GM. The tutorial is an update of the 2010-11 presentations of the SDS Tutorial.

Larry Clark reported on behalf of Anil Pahwa, chair of the DMS DA Award selection committee, that the Nomination deadline is extended to January 31. 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. Staszesky 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. A list of planned proposals needs to be submitted to the Distribution Subcommittee by July 2014. The list is to include the title and the moderator for the invited panel proposal. Proposals are solicited for an invited panel proposal for the IEEE PES 2015 ISGT conference.

DMS Task Force (DMS TF) – Bob Uluski

Bob Uluski welcomed the group which included 34 representatives of utilities, vendors, and academic institutes. Minutes of the last meeting (Vancouver, July 2013) were accepted without amendment.

DMS TF is sponsoring invited panel sessions at the IEEE T&D show and the 2014 GM. Possible topics for future panel sessions include practical distribution state estimation and distribution modelling challenges. Proposed panels are to be submitted to the SDWG/DMSTF for its consideration.

The group heard presentations on DMS Modeling Challenges from Larry Clark (Alabama Power) and Al Morgan (Alstom Grid). Copies of these presentations will be posted to the website.

Bob Uluski led roundtable discussion of SD/DMS tends and projects. The participants in the roundtable discussion were requested to jot down their comments and email their contribution to Fred Friend at fafriend@aep.com .

Volt/VAR Control & Optimization (VVTF) Task Force – Tom Rizy
Bob Uluski welcomed the group which included 35 representatives of utilities, vendors, and academic institutes. Minutes of the last meeting (Vancouver, July 2013) were accepted without amendment.

Bob Uluski reported recent vacancies in the VVTF leadership, i.e. the chair and vice chair positions have been vacated. After background discussion, Bob recommended new officer slate for VVTF: Larry Conrad for chair, Bob Uluski for vice chair and Le Xu for secretary. The new slate of officers for VVTF was approved unanimously.

The VVTF work on P1885 – *"Guide for Assessing, Measuring and Verifying Volt-Var Control Optimization on Distribution Systems"* – was discussed. Progress has been made on writing the document, as draft versions of a number of the key sections of the report have been prepared by the volunteers. An outline of the proposed guide was shown along with the names of volunteers who are leading and supporting the effort for each section of the report. Bob accepted the responsibility to coordinate and facilitate the development of the guide.

The SD Working group is sponsoring 2 invited panel sessions at the 2014 T&D Conference & Exhibition in Chicago.

The VVTF is planning to propose a Tutorial on VV concepts that, if approved by the Committee, would be presented at the 2015 general meeting. The tutorial topic list and volunteer instructors were reviewed. Larry Clark made a presentation reporting the IEEE PES Tutorial Proposal Preparation and Submission requirements. Murty Yalla agreed to become the organizer for the VVTF tutorial.

The task force heard presentations on System Demand Management from Larry Conrad (Conrad Technical Services LLC) and Michael D Simms PE (Duke Energy Ohio). Tom Beckwith and Wayne Hartmann made a presentation reviewing volt var control results at Georgia Power.
Copies of these presentations will be posted to the website.

DISTRIBUTED RESOURCES INTEGRATION – Tom McDermott, Chair
No report is available.

VOLTAGES IN PRIVATELY AND PUBLICLY ACCESSIBLE LOCATIONS – Chuck DeNardo, Chair
The Stray & Contact Voltage Working Group met on the afternoon of Monday January 13th at the New Orleans meeting. There were approximately 30 people in attendance. Following review and approval of the Vancouver meeting minutes, the draft document was projected and

discussed. Several comments specific to the structure and content of the draft were made, but much of the discussion was centered on the fact the working group's PAR is set to expire in December. The Group discussed the implications of PAR expiration and the possibility of moving rapidly to bring the draft to ballot. Erin Spiewak of IEEE SA spoke about the Working Group's options and provided an explanation of the balloting process. According to Erin, the group should request an extension of the PAR, or it should finalize the draft document and move it to ballot coincident with a request for extension. Both of these actions would have to be started shortly after the PES General Meeting in July. And both would have to be completed by October of this year. In an attempt to improve progress on the draft and get it ballot ready, it was suggested that a small group of individuals get together before the July meeting and go through the document line by line. The majority of section leads were present in New Orleans and they agreed to meet before the July meeting. The Working Group meeting was adjourned following additional discussion of the importance of completing a draft and getting it to ballot.

Following the New Orleans Working Group meeting, the section leads met in Knoxville, TN on March 18th and 19th. Significant progress was made, but there is still much work to do. Because the formation of an editorial Task Force requires majority approval of the Working Group's voting members, an on-line vote was held. The editorial task force was unanimously approved.

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 Saint
No report is available.

STANDARDS

NESC – Rusty Soderberg
The timeline for the 2017 NESC is:

- September 2013: The NESC Subcommittees met to consider change proposals to the NESC and prepare recommendations.
- September 1, 2014: Preprint of change proposals will be available on-line. This 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.

There are 751 total change proposals. Many of the change proposals (254) are in the clearance section and in the strength and loading section (175). Subcommittee 5 "Strength and Loading" still has 90 change proposals remaining to review.

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 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) from 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 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:

- 2014 T&D Conf. & Expo, Chicago: Changes to 1366-2003 – by the Reliability Indices TF
- 2014 T&D Conf. & Expo, Chicago: Case Studies of Experiences with Distributed Resource Interconnections on the Distribution System – Tom McDermott
- 2014 T&D Conf. & Expo, Chicago: Advanced Distribution Management Systems IT and OT Converge - Utility Operational Experience and why IT matters
- 2014 T&D Conf. & Expo, Chicago: Distribution Operations with High-Penetration of Beyond the Meter Intermittent Renewables
- 2014 T&D Conf. & Expo, Chicago: Trends in Advanced Outage Management
- 2014 T&D Conf. & Expo, Chicago: Restoring Distribution Grids from Natural Disasters using Smart Distribution Technologies
- 2014 T&D Conf. & Expo, Chicago: Technologies for Advanced Volt/Var Control Implementation'
- 2014 T&D Conf. & Expo, Chicago: Assessment Strategies and Benefits of Advanced Volt/Var Control
- SPM 2014 Washington D.C.: Smart Distribution Applications
- SPM 2014 Washington D.C.: Smart Distribution Analytics to Integrate Distributed Energy Resources and Microgrids for Flexible Distribution Grid Operations
- SPM 2014 Washington D.C.: Advances in State Estimation for Distribution Networks – Panel #1
- SPM 2014 Washington D.C.: Advances in State Estimation for Distribution Networks – Panel #2
- SPM 2014 Washington D.C.: Case Studies of Experiences with Distributed Resource Interconnections on the Distribution System – Tom McDermott
- SPM 2014 Washington D.C.: Breakdown of Big Areas into Smaller Areas for T-MED - Heide C., Dan W., Mark K., and Andy Holt

TUTORIAL

Two Tutorials are planned:

- 2014 T&D Conf. & Expo, Chicago: Understanding Distribution Service Reliability, Tracking Reliability, and Ways to Improve Your System Performance While Considering Costs – by the Reliability Tutorial TF
- SPM 2014 Washington D.C.: Smart Distribution Systems

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

Banting, J., Pewaukee, WI
Berkowitz, D., Monroe, 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., Ballstonsper, 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
Menten, T., Boise, ID
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
Riley, C., Forest Park, GA
Rizy, T., Oak Ridge, TN
Robinson, R., Topeka, KS
Sabin, D., Beverly, MA
Saint, B., Arlington, VA
Schott, S., Green Bay, WI
Siew, C., Burnaby, BC, Canada
Simard, G., Montreal, QC, Canada
Smith, J., Phoenix, AZ
Soderberg, R., Jackson, MI
Taylor, L., Charlotte, NC
Thatcher, M., Kansas City, MO
Venkata, S.S., Oro Valley, AR
Viglietta, J., Philadelphia, PA
Walling, R., Schenectady, NY
Ward, D., Richmond, VA
Warren, C., Boston, MA
Werner, V., Milwaukee, WI
Xu, L., Raleigh, NC