

**IEEE Distribution Subcommittee
Draft Meeting Minutes
July 27, 2011
Detroit, MI**

The meeting convened at 1:00 p.m. with 32 members and 1 guest present.

ADMINISTRATIVE

Vice Chair John McDaniel called the IEEE Distribution Subcommittee meeting to order. The notes from our January 2011 meeting were approved.

We elected John McDaniel as the new Chair of the Distribution Subcommittee and Julio Romero-Aguero as the new Vice Chair.

CHAIR REPORT – Cheri Warren, *Distribution Subcommittee*

No Chair Report was available.

VICE CHAIR REPORT – John McDaniel, *Distribution Subcommittee*

Between January 2011 and July 2011, the Subcommittee has been assigned a total of 19 transactions grade papers and 2 PES Letters to review. Of these, 11 were new papers and 8 were revisions. This is below the number of papers from same period last year. The web site for the process is located at: <http://mc.manuscriptcentral.com/tpwr-d-pes> .

There are two PES awards associated with the Distribution area. The first is the Excellence in Distribution Engineering and this year's recipient is Lee Taylor. The second is the Douglas Staszeky Distribution Automation. We need to make sure worthy candidates are nominated for these awards. If we do not submit nominations, no one will win these awards. So please consider nominating worthy candidates for these awards. For the Excellence in Distribution, contact Jim Burke (DistJimB@aol.com) and for the DA Award, contact Larry Clark (glclark@ieee.org).

WORKING GROUP REPORTS

DISTRIBUTION RELIABILITY – Rodney Robinson, Chair

The Working Group met at 1:30PM on July 26, 2011. Introductions were made and the minutes from the January 20th, 2011 Atlanta WG Meeting were approved.

Heide Caswell discussed the overall results from the IEEE 2010 Benchmarking including: the accuracy of rural, urban and suburban breakdown; trends on number of major event days; major event day CAIDI comparisons; Box and Whiskers comparison of ranges of CAIDI, SAIDI and SAIFI. Future benchmarking considerations may include: comparison of transmission and distribution contributions to reliability indices; looking at the number of miles of distribution and

the number of circuits (customer density/mile). Bob Saint then discussed the overall results of the NRECA 2010 benchmarking.

Joe Eto of Lawrence Berkley National Laboratory presented information on the Public Availability the 'ICE Calculator', LBNL's draft report on a longitudinal analysis of 11 years of distribution reliability, as reported by 155 utilities and LBNL's support to DOE/EIA plans to collect information on distribution reliability.

Task Force on Outage Reporting – Rodney Robinson

The Working Group meeting resumed on July 27 when Rodney called the meeting of this Task Force to order at 0801 and reviewed the Agenda.

P1782 Review

- Suggestion to incorporate an explanation of when lighting should be used as a cause
- Discussion on equipment
 - suggestion that there is almost always an outside influence that caused the equipment to fail
 - most outage events are due to equipment failures, but the industry (TAD) reports 1/3 are due to weather
- Rodney will send out P1782 for final review before converted into IEEE format
 - Comment due back by the end of September 2011
- Other Comments
 - Cheri Warren suggested possibly creating an online tutorial under Expert Now
 - Lee Taylor pointed out that the present purpose of the cause codes are meant for benchmarking comparisons, not root cause
 - Dave Lankutis agreed there is a need to train but also include best practices

Bob Saint gave two presentations

- RUS Bulletin 17304-119
- RUS Reliability: Interruption Reporting - Service Continuity Objectives for Electric Distribution Systems

Task Force on Reliability Indices P1366 – Cheri Warren/John McDaniel

The members discussed proposed changes to the Guide, including New Duration Indices, CELID-T and CELID-S and catastrophic days. The Task Force then held a Round Table discussion and a review of the Regulatory Update Summary

Two future meeting Panel Sessions were proposed: 1) Catastrophic Events for May 2012 Expo and 2) Interruption Reporting Practices P1782 Guide for May 2012

SWITCHING AND OVERCURRENT PROTECTION – Lee Taylor, Chair

Lee Taylor (lee.taylor@duke-energy.com) called the meeting to order at 10:10 with 20 members and 4 guests present. Lee Taylor conducted a safety discussion regarding exits, fire alarm procedures and medical emergencies. He then reviewed the bylaws on Patents and Standards regarding inappropriate topics for Working Group meetings. After introductions, the minutes of

the previous meeting were reviewed and a typo was corrected. The minutes were approved as corrected.

The Working Groups then discussed the P-1806 guide, reviewing and extending the previous discussion. The Group agreed to use the terms Customer Interruptions (CI) and Customer Minutes Interrupted (CMI) to conform with P1366 in the P1806 purpose statement. It was suggested to use the term FLISR (“flizzer”), meaning Fault Location, Isolation and System Restoration, in P1806 for cases where the switching actions are intended to isolate a section of the system and leave the rest energized. Other possible terms include self-healing (too generic), Distribution Automation (not approved), sectionalization or automated sectionalization (not preferred), automated optimized restoration (AOR), automated loop. Lee requested additional suggestions be sent to him by email.

The Working Group has the following task list: create an overall structure for the guide; identify needed clauses; find authors; Lee will send a straw man P1806 guide based on the Duke Energy guide to Greg Welch and other members to obtain volunteer authors.

Rich Christie (richc@uw.edu) presented on Protection Placement in the Optimal Vegetation Management (OVM) Project at National Grid USA. Lee discussed the possibility of the Working Group developing a Distribution Overcurrent Protection Philosophy and Practices guide.

The meeting adjourned at 12:00 N.

SMART DISTRIBUTION – Georges Simard, Chair

The meeting was extremely well attended, with over 50 participants representing electric utilities, consultants, academia, and industry present for the meeting. Georges Simard welcomed all attendees and officers. Prior to starting working group business, Georges reviewed IEEE policies governing the conduct of the working group meeting. The minutes of the previous meeting were accepted without amendment, but participants were once again encouraged to review and verify the roundtable discussion notes from the prior meeting.

The Working Group on Smart Distribution (SDWG) is very active at this year’s GM, conducting 3 panel sessions on smart distribution, sponsoring a full-day tutorial on smart distribution, and participating in the smart grid super session. SDWG members were encouraged to chair sessions, submit papers and ideas for panel on this topic.

The SDWG will propose possibly three panel sessions on smart distribution for the 2012 GM in San Diego. We are looking at the content for 2 panel sessions with possible chairs : Avnaesh Jayantilal and Julio Romero Agueru. We are also seeking a chair for the theme: Coordination of the SD Optimization Programs.

Larry Clark has a panel session ready for the 2012 T&D (Smart Initiatives produce Smart Innovations).

Georges Simard demonstrated the Smart Distribution WIKI, which includes numerous additions since the last meeting; members were encouraged to submit material for this site. In parallel a PAR for a Smart Distribution guide will be proposed by Georges.

Larry Clark indicated that the winner of 3rd annual Doug Staszkesky DA Award will be announced on July 26, 2011 at the IEEE awards ceremony; members were informed that the nomination process for next year's award are being accepted.

Reza Iravani (filling in for Chris Marnay) made an excellent presentation on the work of CIGRE WG_C6.22-Microgrid_Evolution_Roadmap.

SDWG would like to add a task force that will focus on practical applications and implementation challenges of Distribution Management Systems, which are rapidly becoming an essential element of the smart grid. This will be discussed further at the next meeting.

The SDWG is planning to meet at the IEEE PES Joint meeting in January 2012.

Volt/VAR Control & Optimization (VVTF) Task Force

The VVTF task force meeting was very well attended, with over 40 participants representing electric utilities, consultants, academia, and industry present for the meeting. Tom Rizy welcomed all attendees and officers and new participants. The task force is sponsoring one panel session – “Integration of Smart Grid Technology into Volt/Var Optimization” – at this year's GM. The panel session is scheduled for 1PM to 3PM on Tuesday, July 26 and involves three presentations: (1) The Benefits and Challenges of the Integrated Volt/Var Optimization in the Smart Grid Environment (2011GM0644) by Nokhum Markushevich (Smart Grid Operations Consulting); (2) Achieving Greater VVO Benefits through AMI Implementation (2011GM0347) by Nokhum Markushevich for Wenpeng Luan (BC Hydro); (3) Volt/Var Control Using Inverter-based Distributed Energy Resources (2011GM0271) by Tom Rizy (ORNL).

The VVTF will propose three panel sessions on Volt/VAR Control and Optimization for the 2012 T&D Conference and 2012 GM in San Diego. See details in Panel Sessions section of these notes. SDWG members were encouraged to submit papers and ideas for these panel topics although we already have some candidate papers/presentations for each of the panel sessions.

Tom Rizy discussed the Vision, Scope and Objectives of the task force, and reviewed some of the short-term and long-term challenges for the industry in the area of Volt/VAR control. The VVTF is planning to prepare one or more white papers (or guides) on the subject of Volt-VAR control; members were encouraged to volunteer to write sections of the paper. We plan to conduct a survey in the near future to solicit candidate contributors and to provide input on topics that should be addressed. The VVTF is also seeking to conduct a workshop on the topic of VVO; Bob Uluski volunteered to coordinate this effort perhaps in conjunction with the 2012 T&D Conference or separately such as having one in Knoxville organized by EPRI and ORNL. A tutorial on VVO was mentioned and discussed further in the Distributed Resource Integration

Working Group with the plan to have one in 2013 to address both VVO and DER impacts and possibly in conjunction with the Distribution Planning Working Group.

Tom Rizy and Nokhum Markushevich made presentations about the status of 1547.8 which is considering local volt/var control along with high penetration PV on distribution systems. Bob Uluski made a brief presentation on EPRI's Load Modeling for Voltage Optimization effort, which is being coordinated with the VVTF. The VVTF is planning to meet at the IEEE PES Joint meeting in January 2012.

DISTRIBUTED RESOURCES INTEGRATION – Bob Saint, Chair

The Working Group met at 8:00 AM on Tuesday July 26, 2011 with 52 attendees. Tom Rizy gave a presentation on his paper, "Impacts of Varying Penetration of Distributed Resources with & without Volt/Var Control: Case Study of Varying Load Types". A Panel Session was proposed for 2012 T&D Conference in Orlando, FL with the following presentations: Distributed Energy Storage Applications; Update on IEEE 1547.4; Update on IEEE 1547.6; Update on IEEE P1547.8. A Combo session was planned for 2012 General Meeting. A Joint Tutorial for the 2013 General Meeting with the Smart Distribution Working Group and the PSPI Distribution System Planning Working Group was discussed. The status of IEEE 1547 series of standards reviewed (see SCC21 Liaison Report). Draft 5.0 of IEEE P1547.7 and Draft 1 of IEEE P1547.8 were reviewed.

LIGHTNING PERFORMANCE OF DISTRIBUTION LINES – John McDaniel, Chair

No Report is available.

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

The Stray & Contact Voltage Working Group met from 2:00 p.m. to 5:00 p.m. on Monday July 25th in Room Brule B. There were approximately 40 people in attendance. Following presentation of the mandatory patent infringement and litigation slides, Distribution Subcommittee Chair and Director Elect of Division 7, Cheri Warren, spoke with the group concerning the urgent need to put pen to paper and get something useful in the public domain. Pointing to the agreed upon outline the chair followed with an update of activities to date, and made a few announcements concerning the stray and contact voltage regulatory and legislative activity presently taking place in Minnesota and Maryland. This was followed by a discussion of EPRI and NEETRAC's offers to allow the working group access and use of their existing stray and contact voltage documents to help speed the drafting process. Volunteers were solicited to review this existing work, and to find ways to modify and incorporate useful sections into the group's Trial Use Guide draft. The only response was an offer to provide the services of a University of Alberta graduate student.

After modification and approval of the January 2010 Atlanta meeting minutes the following discussions/presentations took place:

1. Doug Door led a brief discussion on the need to modify the existing NEC equipotential bonding requirement for pools. The group agreed an e-mail survey should be conducted to collect meaningful pool shock data that could then be used to support a code change proposal.
2. Betty Tobin and Giancarlo Leone discussed the on-going literature review process and indicated some of the documents would soon be available on the group's web site. To date about 120 of 220 documents have been reviewed.
3. A significant amount of time was then spent discussing the latest revision of Clause 6 (i.e. Contact Voltage). Dave Kalokitis and Aaron Prazan led the discussion. After making several revisions to address some of the major concerns the draft will be placed on the group's web site. An e-mail to the all on the mailing list will then ask for review and big picture commentary prior to the next meeting.
4. Larry Conrad briefly discussed North American efforts to hold equipment manufacturers accountable for the harmonic currents they create. He asked that attendees spread the word about this effort and suggested comments and concerns be sent to him at L.conrad@IEEE.org.
5. Jim Bouford again closed out the meeting with a continuing discussion of the "Not to Exceed" table previously presented.

WILDLIFE PROTECTORS – Caryn Riley, Chair

No Report is available.

LIAISON REPORTS

Insulated Conductors – John Banting

Faulted Circuit Indicator Discussion Group B17D

The group is preparing to combine IEEE 1216 and IEEE 1610 which are the Single Phase Application Guide and the Three Phase Application Guide into one comprehensive document. Fran Anger is the present Chair of the group. While attempting to obtain a PAR for the work it was discovered that the responsibility for the Guides still resides with the Distribution Subcommittee according to IEEE – SA. John Banting, Fran Anger, Bill Ash (IEEE) and John McDaniel will work with IEEE – SA to transfer ownership to the ICC.

Power System Communications

Broadband over Power Line BPL

The Standards IEEE 1675 and IEEE 1775 have both been approved and released. As a result there is nothing new to report at this time.

Power Systems Instrumentation and Measurement (PSIM)

Sensors for the Smart Grid

An item of that may be of interest to the Distribution Subcommittee is that, roughly a year ago, PSIM formed a new Working Group called the Sensors for the Smart Grid. The Group is chaired

by Harold Kirkham. On Tuesday, July 26th, the Group held a panel session on Sensors for the Smart Grid. The next planned work of the Group is to prepare a paper on sensor technology. The focus of the Group is both distribution and transmission. I am a member of this Group and will report on its status if there is interest.

Power System Relaying Committee – Fred Friend

The next PSRC meeting will be at the Hyatt Regency Minneapolis Hotel in Minneapolis, MN, 12-15 September 2011. Additional information can be found starting from the following link: <http://www.pes-psrc.org/>

Working Group C2, chaired by Alex Apostolov, is preparing 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 D2, chaired by Gary Kobet, is revising and updating C37.104 – Guide for Automatic Reclosing of Line Circuit Breakers and AC Distribution and Transmission Lines. This is on a fast track to be completed in 2012.

Working Group D11, chaired by Fred Friend, is preparing a report to the PSRC describing the effect of Distribution Automation on Protective Relaying with plans for completion this year.

Working Group D26, chaired by Joe Mooney, is revising and updating C37.114 – Fault Locating Guide with an expected completion in 2014.

Working Group H2, chaired by Mark Simon, is preparing a report to the PSRC describing protective relay applications that can make use of the communication infrastructure provided by the Smart Grid.

Working Group H10, chaired by Rick Cornelison, is preparing a report to the PSRC describing a convention to uniquely identify (name) installed Intelligent Electronic Devices (IEDs) including measured and calculated quantities for the purpose of sharing data collected by these devices.

SCC 21 – Bob Saint

IEEE 1547 Interconnection Standards

1547 – 2008 Standard for Interconnecting Distributed Resources with Electric Power Systems

1547.1 – 2011 Conformance Test Procedures for Equipment Interconnecting DR with EPS - Reaffirmed in 2011

1547.2 – 2008 Application Guide for IEEE 1547 Standard for Interconnection of DR with EPS

1547.3 – 2007 Guide for Monitoring, Information Exchange and Control of DR

1547.4 – 2011 Guide for Design, Operation, and Integration of Distributed Resource Island Systems with EPS

P1547.5 Guidelines for Interconnection of EPS >10 MVA to the Power Transmission Grid

1547.6 – 2011 Recommended Practice for Interconnecting DR With EPS Distribution Secondary Networks

P1547.7 Draft Guide to Conducting Distribution Impact Studies for DR Interconnection

P1547.8 Recommended Practice for Establishing Methods and Procedures that Provide Supplemental Support for Implementation Strategies for Expanded Use of IEEE Standard 1547

Further information can be found at <http://grouper.ieee.org/groups/scc21/>

P2030 Series

P2030 (Interoperability) - Recirculation in process

P2030.1 (Electric Transportation Infrastructure) - Biweekly webinars

P2030.2 (Energy Storage Interoperability) - Just starting

STANDARDS

NESC – Rusty Soderberg

No report is available.

NEC – Greg Obenchain

No report is available.

PANEL SESSIONS

Panel sessions planned for 2012:

- Volt/Var Integrated Control, Jignesh M. Solanki, West Virginia University, jmsolanki@csee.wvu.edu; IEEE PES General Meeting
- Conservation Voltage Reduction (CVR) Methodologies, Anish Gaikwad, EPRI, agaikwad@epri.com; IEEE T&D Conference or the IEEE PES General Meeting
- Three-phase vs. Single-phase Volt/Var Control, D. Tom Rizy, dtom@ornl.gov; IEEE T&D Conference or the IEEE PES General Meeting
- Smart Initiatives produce Smart Innovations; IEEE T&D Conference
- Changes to 1366-2003 – Catastrophic Event for May 2012 T&D Conference
- Interruption Reporting Practices P1782 Guide for 2012 or 2014 T&D Conference

PRESENTATIONS

Two presentations were given at the meeting:

Statistical Discriminant Analysis of High Voltage Feeders in Western Australia Distribution Network - Yingliang Li, Curtin University; Peter Wolfs, Curtin University

Comparison of Reactive Power Support in Distribution Networks Provided by Capacitor Banks - Augusto Rueda-Medina, Universidade Estadual Paulista; Jesus Lopez-Lezama, Universidade Estadual Paulista; Antonio Padiha-Feltrin, Universidade Estadual Paulista.

These presentations 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

Arden, D., Minneapolis, MN
Asgharian, D., Portland, OR
Banting, J., Pewaukee, WI
Berkowitz, D., Monroe, WA
Bouford, J., Augusta, ME
Burke, J., Cary, NC
Carroll, P. Milwaukee, WI
Caswell, H., Portland, OR
Christie, R., Seattle, WA
Clark, L., Birmingham, AL
Cole, J., Bozeman, MT
Conrad, L., Plainfield, IN
Delmas, H., Montreal, QC
DeNardo, C., Milwaukee, WI
Ehrlich, R., Newark, DE
Friend, F., Charleston, WV
Frost, K., Oakbrook Terrace, IL
Gilmer, D., Craig, CO
Goodfellow, J., Redmond, WA
Hall, D., Newark, DE
Hayes, H., St. Louis, MO
Hisayasu, R., Bellevue, WA
Hoogendan, I., Portland, OR
Jones, J., Salt Lake City, UT
Khodaie, M., Albuquerque, NM
Lambert, F., Forest Park, GA
McDermott, T., Pittsburgh, PA
McGranaghan, M., Knoxville, TN
Moran, N., San Francisco, CA
Nielsen, T., Minneapolis, MN
Obenchain, G., Washington, DC

Ochoa, L., Manchester, UK
Pahwa, A., Manhattan, KS
Patterson, M., Boise, ID
Pehosh, M., Arlington, VA
Rafferty, M/, Jacksonville, FL
Razon, A., Arlington, VA
Riley, C., Forest Park, GA
Rizy, T., Oak Ridge, TN
Robinson, R., Topeka, KS
Russo, D., Seattle, WA
Sabin, D., Knoxville, TN
Saint, B., Arlington, VA
Schott, S., Green Bay, WI
Schwalm, A., Victor, NY
Short, T., Ballstonspier, NY
Siew, C., Burnaby, BC, Canada
Simard, G., Montreal, QC, Canada
Smith, H.L.
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
Wang, D., New York, NY
Ward, D., Richmond, VA
Warren, C., Boston, MA
Welch, G., Raleigh, NC
Werner, V., Milwaukee, WI
Williams, C., Maitland, FL
Yuen, D., Bellevue, WA