

**IEEE Distribution Subcommittee
Draft Meeting Minutes
January 13, 2010
Orlando, FL**

The meeting convened at 1:00 p.m. with 29 members and 9 guests present.

ADMINISTRATIVE

Vice Chair John McDaniel called the IEEE Distribution Subcommittee meeting to order. The notes from our July 2009 meeting were approved.

CHAIR REPORT – Cheri Warren, *Distribution Subcommittee*

No Chair Report was available.

VICE CHAIR REPORT – John McDaniel, *Distribution Subcommittee*

Between July 2009 and January 2010, the subcommittee has been assigned a total of 34 transactions grade papers to review. Of these, 17 were new papers and 17 were revisions. This is up significantly over the same period last year. The web site for the process is located at: <http://mc.manuscriptcentral.com/tpwr-d-pes> .

We were initially assigned even more papers for review. But the papers were either submitted to the wrong journal by the authors, or were directed to us rather than to other committees. I have seen this in the past, but it seems to be more prevalent, now.

There are now two PES awards associated with the Distribution area. The first is the Excellence in Distribution Engineering. The second is the Douglas Staszkesy Distribution Automation Award, which was awarded for the first time in 2009. 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 – Cheri Warren, Chair

Introductions – 48 attendees

The final results of the IEEE 2008 reliability benchmarking were presented and will be sent to the WG members. Heide Caswell, Pacific Power, has cleaned up the process and spreadsheet to help facilitate in the 2009 data collection while keeping the survey anonymous. The group discussed distributing the data template to enable each company to run the macros which

calculate annual metrics prior to submittal to the benchmarking repository. This additional step will allow companies to review their results in a more timely fashion.

The WG reviewed the proposed changes to IEEE 1366-2003 definitions section developed in the November 17th web meeting. There still seems to be difference between the utilities on the definition of 'customer' and how they are counted. Further efforts will be made to provide clarification, specifically for multiple meters at one location.

The WG discuss further the application of the 24-hour window for calculating the daily SAIDI minutes for the prior 5 years and applying the T_{MED} during the current year for major event day determination. After much discussion, the WG agreed that everyone would use the midnight-to-midnight for the historical and major event day determination for benchmarking comparison, but that reporting to regulators may result in a different use of sliding time windows, depending upon individual conventions.

The Catastrophic Days TF noted that the data set for the U94 utility that was discussed at the Calgary meeting was determined to be inaccurate which forced the TF's to refocus on the three approaches for catastrophic event determination discussed previously. The TF will have their recommendation for inclusion in the Guide before the 2010 General meeting.

The Interruption Reporting Practices TF discussed the changes to section 3 from the December 3rd web meeting. The TF hopes to have the draft ready for entering into IEEE format after the January 2011 technical meetings.

The WG is planning to have one panel session in New Orleans on 'Collection, Access, and Use of Customer Level Interruption Data as Pertaining to Distribution Reliability' - Val Werner will chair the panel session

Roundtable discussion:

At the summer WG meeting 2009 in Calgary, Ray Piercy of CEATI (Centre for Energy Advancement through Technological Innovation) presented the report 5140 - "Uniform Practices in Reporting Momentary Outages and their Relationship with Power Quality".

CEATI is proposing that the utilities with AMR/AMI meters begin using SARFI (system average RMS frequency index) which was developed by EPRI over twenty years ago. Further their recommendation is to use SARFI70A & B which would count momentary interruptions and voltage sag events where the voltage sags to below 70% of nominal.

In the roundtable discussion, Lee Taylor of Duke which did sponsor the CEATI study indicated that they have tested their standard smart meters and all of the meters were not able to record all voltage sags. The Ohio PUC utilized this report in their discussion with Duke for monitoring requirements for Duke since they do have AMR in the state. Lee cautioned everyone to make sure what your utilities AMR/AMI meters can really measure and record.

SWITCHING AND OVERCURRENT PROTECTION – Lee Taylor, Chair

The Switching & Overcurrent Protection Working Group met from 3:00 to 5:00 PM on January 12, 2010 with 36 members and guests present.

The PAR for our work was approved on November 2, 2009, P1806, Guide for Placement of Overhead and Underground Switching and Overcurrent Protection Equipment. The purpose of this guide is to provide criteria for placement of switching and protective devices for distribution circuits. The scope covers feeder and branch line equipment. Drivers for device placement, such as reliability and operational considerations are identified. All types of switching and overcurrent (OC) equipment are covered including:

- Manual switches
- Automated switches
- Load break vs. non-load break
- Reclosers / Sectionalizers
- Fuses (Overcurrent and Current Limiting)
- Distribution Automation (DA) device control.

A revised Draft Outline for the Guide was presented which includes Reasons for Installing Devices; Predictive Reliability; Value of Reliability; and Criteria for Device Placement. Draft material for some of these sections will be reviewed at the PES General Meeting in July.

Charlie Williams announced that Lee Taylor will be taking over as Chair of the Working Group after this meeting. Charlie will continue to participate as Vice Chair.

SMART DISTRIBUTION – Georges Simard, Chair

Review of Name and Scope of the DAWG: DAWG members discussed a new name and scope for the DA Working Group and reached the following consensus, which will be submitted to the Distribution SC for approval:

New Proposed Name: Smart Distribution Working Group (SDWG)

New Proposed Scope: Treatment and advancement of design concepts and philosophies as they apply to the optimization of smart distribution systems including overhead and underground distribution. Development of environmentally acceptable and technically and economically feasible design guidelines.

Discussion of Smart Distribution Working Group Officers: Two year term of Smart Distribution working group officers ends in January 2010. Due to the number of working group initiatives started by the current officers that are just getting underway, it was proposed that the terms of the current officers be extended. This proposal was earlier approved by the IEEE T&D Committee, and there were no objections to this proposal from the attendees. Therefore, the current officers will stay in office for an additional one year.

Launching of Volt-VAR Task Force: The inaugural meeting of the Volt-VAR Task Force (VVTF) of the Smart Distribution Working Group was held immediately following the SDWG meeting. Minutes of the VVTF are posted on the VVTF page of the SDWG web site.

Doug Staszkesky Special Award: Larry Clark, Chair of the selection committee for this special award, announced that the nomination period for the 2010 DMS DA Award is closed as of January 1, 2010. The committee received 4 nominations, and a selection will be made soon. The nomination period for the 2011 DMS DA Award is open with the deadline for receipt of 2010 nominations is January 1, 2011. The DMS DA Award description and nomination form can be found in the IEEE PES Awards and Recognition Web site in the General PES Awards list.

SDWG Activities for IEEE T&D Conference and Exposition, New Orleans, LA, USA, April 20-22, 2010

Paper Panel Session: "Integrating AMI and Advanced Sensor Data with Distribution Automation" The SDWG Invited Panel Session is full for the April 2010 IEEE PES T&D conference & exposition. The following have agreed to participate in the panel session.

1. Russell (Russ) Neal, SCE
2. Thomas (Tom) F. Weaver, AEP
3. Alan Bern, Oncor
4. Dean Craig, ENMAX

SDWG Activities for IEEE PES General Meeting, Minneapolis, MN, USA; July, 2010

SDWG Utility Presentation: Lee Taylor, Duke Energy, is confirmed to make a utility presentation to the SDWG meeting at the July 2010 GM in Minneapolis

Panel sessions at 2009 General Meeting: Two panel sessions pertaining to DA are being conducted at this General Meeting. Panel sessions being conducted are:

Topic: "DA as Part of the Smart Grid Roadmap" Chair Larry Clark: This SDWG Invited Panel Session for the July 2010 IEEE PES General Meeting conference & exposition is full. The following are confirmed participants for the panel session.

1. Robert (Bob) Uluski, Quanta Technology, LLC
2. Haukur (Hawk) Asgeirsson, DTE Energy
3. Glenn Lampley, Progress Energy Carolinas
4. Ethan Boardman, AREVA T&D

Topic: "Information Models for Distribution Automation" Chair Georges Simard; G Simard. Work undergoing, not completed yet

Tutorial on DA Concepts

A SDWG-sponsored tutorial on Smart Distribution Systems is planned for the next General meeting, pending authorization from the distribution SC. Thanks to Anil Pahwa for his help in arranging the tutorial.

Email Surveys

Bob Uluski indicated that Part II of a survey of “Advanced Fault Location, Prediction and Detection for Distribution Systems” was conducted by the SDWG on behalf of Southern California Edison and Mani Venkata. Another survey was conducted on Distribution Management System Sustainment Strategies. The survey results are available on the SDWG website. Members are encouraged to participate in future surveys and to use this email survey process to solicit information of interest to the WG from SDWG members. A copy of the procedure and governing policies for using this facility are contained on the SDWG website.

SD Working Group Documents

- Smart Distribution WIKI – Considerable progress has been made in setting up a “Wikipedia”-style website for DA and smart distribution systems, which is a joint project between EPRI and SDWG. EPRI is hosting this WIKI facility on behalf of SDWG. The WIKI can be accessed via the following link: <http://wiki.powerdistributionresearch.com> and via the SDWG website. On January 12, 16 persons attended the Smart Distribution WIKI workshop. Basic instructions and rules were given to modify the WIKI. All members are invited to either send contributions to the officers or to log in to the website and ask the officers to get the right to add or modify WIKI pages.
- IEEE Book on Distribution Automation – Bob Uluski is taking the leadership of this book. No work done in the last 6 months

DA Projects and Research Initiatives for Coordination Projects

Georges requested SDWG members to submit brief summaries of recent DA activities in their company. Several summaries have been submitted and are available on the SDWG website

Research efforts

See “DA Projects and Research Initiatives for Coordination”

Open discussion on Distribution Automation

A roundtable review of DA activities was conducted. Members were encouraged to submit short descriptions of ongoing DA activities at their companies to the SDWG secretary. These summaries will in turn be published on the SDWG website.

Technical Presentations

Two technical presentations were made:

- "Reedy Creek Energy Services - Reliable Magic" - Walt Disney World (WDW) Distribution System: Jerry Murphy described the on WDW electrical installation including PQ issues for some rides of the theme parks, energy efficiency at Disney and other information about electrical equipment, underground practices and water supply. Special Thanks to Jerry for his presentation.
- “A New Approach To Smart Grid Efficiency Using Game Theory, Multicriteria Decision Making and Adaptive Neural Network Algorithms.”, Mike Swearingen; Mike was not able to attend the meeting. Georges Simard made a quick summary of this new approach and asked all members to contact Mike to contribute to the development of this new

approach either with theoretical inputs or with practical case studies to include in a potential analysis using this approach.

The two presentations will be posted on the website.

VOLT/VAR TF – Tom Riley, Chair

Tom Rizy introduced himself as chair of the Volt-VAR task force (VVTF) of the Smart Distribution Working Group and welcomed members to the inaugural meeting of the task force. Herve Delmas was introduced as Vice Chair and Bob Uluski was introduced as Secretary of the task force. There were 35 members and guest present.

Review of Vision and Scope of the VVTF: Tom Rizy presented a suggested vision and scope for the VVTF and invited comments and suggestions from attendees. Comments included a request for more focus on Volt-VAR fundamentals, more discussion about the purpose, benefits, and objectives for volt VAR control, and consideration of standalone volt-var control. The attendees also questioned whether standards development is a task force objective – standards development is not in the immediate future, but may be addressed at a later date. There was discussion of possible products by the VVTF which could include a white paper on current volt/var control and a second on future needs. Members were requested to provide email feedback to Tom regarding the vision and scope of the VVTF and suggestions for future panel sessions and candidate panellists.

Survey on Volt-VAR Control: Herve Delmas will be conducting a survey on current and planned volt-VAR control practices in the electric utility industry. This survey will be emailed to the Smart Distribution Working Group and VVTF members in the next few weeks. Members are strongly encouraged to participate in the survey.

SDWG Activities for IEEE PES General Meeting, Minneapolis, MN, USA; July, 2010

An Invited Panel Session entitled “Volt/Var Control: Present & Future” will be conducted by the VVTF at the July 2010 IEEE PES General Meeting conference & exposition. The Panel Chair is Tom Rizy, and the following are confirmed presentations and participants:

- “Volt/VAR Control at Progress Energy Carolinas Past, Present and Future”, Glenn Lampley (Progress Energy)
- “Development of the Switched Capacitor Bank Controller for Independent Phase Switching on the Electric Distribution System”, Larry Clark (Alabama Power)
- “Distribution Efficiency Voltage Optimization Supports Lowest Cost New Resource”, KC Fagen (RW Beck)
- “Volt-VAR Control in the Smart Grid Era”, Bob Uluski (Quanta Technology)

Technical Presentations

Two technical presentations were made:

- Herve Delmas – “Volt/Var Control Implementation at Hydro-Quebec”
- Cheong Siew – “BC Hydro’s Voltage and VAR Optimization Program”

The two presentations will be posted on the website.

DISTRIBUTED RESOURCES INTEGRATION – Bob Saint, Chair

39 attended the working group meeting on Tuesday, at 1:00 pm, chaired by Bob Saint. Tom McDermott of MelTran, Inc. is the new vice chair. Julio Romero Agüero of Quanta Technology is the new secretary. This working will have a panel session on DR Impacts at the T&D Conference in New Orleans. For the 2010 PES General meeting, there will be a Combo session with a paper presentation by Tom Rzy. The working group is following the IEEE P1547.7 Draft Guide to Conducting Distribution Impact Studies for Distributed Resource Interconnection working group (Bob Saint is chair of that group, too). The working group reviewed the outline for draft 3.0. There was a discussion on issues with IEEE 1547. A suggested revision to the scope and purpose will be given to SCC21 in February

LIGHTNING PERFORMANCE OF DISTRIBUTION LINES – John McDaniel, Chair

The working group reviewed the ballot comments to 1410. These comments will be addressed and a re-circulation ballot will be issued before the General meeting.

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

The Working Group on Voltages at Publicly and Privately Accessible Locations met during the IEEE PES Joint Technical Committee Meeting at Disney's Contemporary Resort in Orlando, Florida from 9:00 a.m. to noon on January 12, 2010. There were approximately 40 people in attendance. During presentation of the mandatory patent infringement and litigation slides there was a brief discussion with Bill Ash, acting Standards Association liaison, regarding concerns that had been expressed about possible working group violations of IEEE's antitrust rules. The group was told there was presently no violation and why, and all present appeared to be satisfied with the explanation. This discussion was followed by approval of the previous meeting minutes and introduction of attendees.

The chair then provided an update concerning officer elections that had been placed on hold pending an answer to the following question. Should the chair be appointed by the sponsoring committee, or elected by the working group members? Because the T&D Committee rules now in place allow for either method, a vote was held to determine which would be used by this working group as it moves forward. Members voted to allow appointment of the chair. Since nominations had been solicited, and no one had been nominated to hold the positions of Vice Chair and Secretary, a vote was not necessary. The existing Vice Chair and Secretary will remain in their positions until the next required vote (i.e. 2012).

Three presentations followed:

- John Goodfellow of Biocompliance Consulting discussed efforts to build a database of important documents related to Section 5 of the guide, Human and Animal Electrical Sensitivity. These documents will be placed in a password protected site linked to the group's web site. They will be reviewed and categorized by members. The site will be expanded in the future to hold relevant documents concerning other sections of the guide.

- Stu Hanebuth of Consolidated Edison brought the working group up to date on activities of the New York State Stray Voltage Task Force, and indicated that members of the task force would remain active working group participants as we move forward.
- Aaron Prazan of Southern California Edison discussed the California Electrical Code (i.e. General Order 95) and how its unique rules governing system neutral conductors can affect both stray and contact voltages levels.

Following these presentations the chair indicated there would likely be a web meeting prior to the next General Meeting. The web meeting would cover recent swimming pool code changes and pool investigation protocol recommendations. Prior to adjournment there was a thought provoking exchange regarding whether or not the group should attempt to set a “not to exceed” voltage exposure standard. Nothing was decided, and additional discussion will be required.

WILDLIFE PROTECTORS – Caryn Riley, Chair

Status - The PAR was extended to December 31, 2010 to complete the re-circulation ballot and publishing the guide. A few final comments from the negative ballots will be reviewed next.

Review of Draft 10 & Negative Ballot Comments - The tenth draft of the guide was reviewed along with the negative ballot comments. All requests by the negative ballots to edit the purpose or scope were answered with a “Disagree” as they would require a PAR change.

- A diagram was added to the guide to depict the shape of the probe used for the Wet withstand – moving electrode test. An improved version will go with the final version submitted to REVCOM for printing after the re-circulation ballot.
- Additional notes were added to Table 1 to clarify the test order and applicable tests for the different guard types.
- A negative ballot comment about the length of time for the fixed versus moving electrode test was discussed. It was agreed to respond with “Disagree” to the balloter in that IEEE Standard 4 is a peer reviewed standard and we are recommending the official procedure.
- Additional points about the test fixture utilized for arrester guard testing were discussed.
- In negative ballot comments #61 & #60, the issue of flashing over an arrester was raised and a solution was suggested by referring to the existing arrester test standard, IEEE C62.11. Upon further review, this solution did not address the voltage distribution concerns during the other electrical tests.
- An additional note has been added to Table 1 to eliminate the wet power frequency flashover test from the surge arrester guard test series since this dielectric test is not applicable to this guard type. An additional concern brought to the attendees’ attention was overvoltage of the arrester during the wet withstand and salt fog aging tests. To address this issue, an addition has been made to the applied voltage description in Sections 5.2 and 5.7.

Final Schedule

A proposed final schedule was review by C. Riley with the following deadlines:

- a. Upload of Comments & Draft 10 – January 22, 2010
- b. Re-circulation Ballot – January 25, 2010 – February 24, 2010

- c. Web Meeting/Conference call to address re-circulation ballot results – March 10, 2010 TBA
- d. Coordinate final paperwork and submit to RevCom – June 14, 2010

New Business

Jon Woodworth asked if the working group had considered creating a second guide for installation practices of wildlife protective products. He is proposing it to both this group and the IEEE Task Force on Bird Related Outages (15.09.03.04). Group consensus was not until this guide is official. There were also concerns that this information would be too manufacturer specific.

Action Items

- Distribute final version of revised PAR draft and minutes to working group.
- Submit comments and re-circulation ballot letter to MyBallot by C. Riley.

LIAISON REPORTS

Insulated Conductors – John Banting

The ICC Faulted Circuit Indicator discussion group met in Scottsdale AZ on November 9, 2009 with approximately 15 individuals present. Fran Angerer is the new Chair and Jerry Harness is the new Vice Chair. The Group has started the preliminary work on a new guide for faulted circuit indicators for overhead applications. Work on the outline for the document as well as the PAR has begun. Some work on sections of the document has begun. The Working Group continues to look for volunteers to assist with the writing assignments.

The ICC will meet next in Nashville, TN on March 21 - 24, 2010.

Power System Relay Committee/Broadband on Power Lines – John Banting

The BPL Working Group preparing P1775 EMC Requirements / Testing and Measurement methods has completed the document which was balloted with a number of negatives. Several meetings have been held since balloting to resolve the negative ballots. The Document is currently out for recirculation ballot.

P1901, Draft Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications Guide is presently out for invitation to ballot.

SCC 21 – Bob Saint

Since the last Distribution Subcommittee meeting:

1547 (Reaffirmed in 2008) for Interconnecting Distributed Resources with Electric Power Systems

1547.1 (2005) - Conformance Test Procedures

1547.2 (2008) - Application Guide

- 1547.3 (2007) - Guide for Monitoring Information Exchange and Control
- 1547.4 - DR Islanded Systems (final stages ready to be balloted)
- 1547.5 - Greater than 10 MVA connections to transmission (inactive)
- 1547.6 - Distribution Secondary Networks (ready to ballot in 2010)
- 1547.7 - Guide for Impact Studies (working on draft 3.0)

P2030 – Guide for Interoperability Standards

Task Force 1 – Power Systems

Task Force 2 – Information Technology

Task Force 3 – Telecommunications

STANDARDS

NESC – Rusty Soderberg

The preprint for the 2012 Code is now available at <http://standards.ieee.org/nesc/index.html>.

Comments on the preprint are due by May 1, 2010. I would encourage everyone in distribution to comment on the change proposals contained in the pre-print, as applicable, to ensure our voice is heard. The NESC subcommittees will meet again in September 2010 to discuss the comments that were received and to vote on the change proposals.

The TP&C NESC WG met on Tuesday, January 12, 2010. We discussed the latest revision (2008) of ANSI O5.1, “American National Standard for Wood Pole Products,” which will be referenced in the 2012 NESC. Annex A, “Fiber stress height effect,” was discussed. This Annex states that poles are known to decrease in ultimate unit strength with height above ground line, but does not apply to poles less than 60 feet in length.

If your state has adopted the 2007 NESC, then Table 253-2, “Alternate load factors for wood and reinforced (not prestressed) concrete structures to be used with the strength factors of Table 261-1B,” and Table 261-1B, “Strength factors for structures, crossarms, and braces for use with load factors of Table 253-2” shall not be used after July 31, 2010.

The 60 foot exclusion in Rules 250 C and 250 D was also discussed in the NESC WG meeting. I have voted to reject removing the 60 foot exclusion from the Code.

The scope of the NEC and NESC relative to the service points continues to be a topic in joint discussions between the two groups. Lighting has been a recent area of concentration.

Change proposal 3042 deals with arc flash assessments to determine the arc rating of clothing worn by lineman. The 2007 edition of the NESC contained new tables for selecting arc rated clothing, but did not address low voltage systems. A new table has been proposed for voltages below 1000 V for use in the 2012 NESC.

NEC – *Greg Obenchain*

There was no report at this meeting.

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Appendix: Current Membership Roster

Chair: Warren, C., London, UK

Vice Chair: McDaniel, J., Syracuse, NY

Secretary: Tobin, E., Everett, WA

Ardrey, G., Beloit, WI

Banting, J., Pewaukee, WI

Bouford, J., Augusta, ME

Burke, J., Cary, NC

Carroll, P. Milwaukee, WI

Caswell, H., Portland, OR

Cole, J., Bozeman, MT

DeNardo, C., Milwaukee, WI

Ehrlich, R., Newark, DE

Fijnvandraat, C., Andover, MA

Forte, V., Albany, NY

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

Jones, J., Salt Lake City, UT

Khodaie, M., Albuquerque, NM

Lambert, F., Forest Park, GA

McDermott, T., Pittsburgh, PA

Meade, K., Charlotte, NC

Moran, N., San Francisco, CA

Nielsen, T., Minneapolis, MN

Nuthalapati, S., College Station, TX

Obenchain, G., Washington, DC

Pahwa, A., Manhattan, KS

Pehosh, M., Arlington, VA

Riley, C., Forest Park, GA

Robinson, R., Topeka, KS

Russo, D., Seattle, WA

Sabin, D., Knoxville, TN

Saint, B., Arlington, VA

Schwalm, A., Victor, NY

Short, T., Ballstonspier, NY

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

Wang, D., New York, NY

Ward, D., Richmond, VA

Welch, G., Raleigh, NC

Werner, V., Milwaukee, WI

Williams, C., Maitland, FL

Yuen, D., Bellevue, WA