

**IEEE Distribution Subcommittee  
Draft Meeting Minutes  
January 18, 2006  
Las Vegas, Nevada**

**DRAFT**

The meeting convened at 9:00 a.m. with 26 members and 3 guests present. The minutes from June 2005 were read and approved.

**ADMINISTRATIVE**

Vice Chair John McDaniel called the IEEE Distribution Subcommittee meeting to order.

**CHAIR REPORT – Dan Ward, *Distribution Subcommittee***

I enjoyed the chance to serve as chair of the Distribution Subcommittee for the past 10 years. I'm prouder still just to be a member of such a diverse group of experts who truly know their stuff, who have a passion for the work and actively work to develop various guides and standards. Of all the subcommittees under the T&D Committee, big D is typically first in standards activities, paper reviews, panel sessions and first, when the system breaks, to step up and offer solutions. More importantly, I think we have more fun than the others too.

We made a number of changes over the years that better focus our agenda for the needs of the present and future members. These changes couldn't have been done without our members' buy-in and it's important that we continually check the pulse of our members. The two questions we need to keep asking are:

- 1) what distribution topics are current and important to our members, and
- 2) how do we attract new members

I've made a lot of lifelong friends through the distribution subcommittee and I will continue to be an active member. Hopefully, my travel restrictions will disappear and I'll be able to join you at a future meeting.

I appreciate all the efforts that the working group and task force chairs went through. It made my job much easier.

I'm quite confident that Cheri Warren will do a great job succeeding me. She is smart, enthusiastic and has a good sense for what is important to all of us. I'm also thankful for the help that John McDaniel and Betty Tobin gave me too. Finally, I give a big THANKS to all our members.

**VICE CHAIR REPORT – John McDaniel, *Distribution Subcommittee***

Between June 2005 and January 2006, the subcommittee has been assigned a total of 23 transactions grade papers to review. Of these, 11 were new papers and 12 were revisions. This

is down slightly from the same period last year. The web site for the process is located at:  
<http://tpwr-d-ieee.manuscriptcentral.com/> .

About once a month I send out a list of papers that require review by the subcommittee to the members of the subcommittee. I'll ask for volunteers to review the papers. After someone volunteers I will assign him or her to review the paper(s) in the system. This will automatically generate an email to the reviewer giving them the web site's address. The reviewer then will log into the system and review the paper(s).

If you do volunteer to review a paper, please make every effort to complete the review within a month. IEEE/PES has the goal of completing reviews within 90 days. As the paper may have been received up to a month before I ask for volunteers, those who do volunteer to review the paper should make every effort to review it in a timely fashion. If there are a sufficient number of reviews returned and the paper is approaching the 90-day limit, I will return the review with those that have been received. Overall, the Distribution Subcommittee is doing its part to meet the 90-day turn a round for reviews.

Please make sure that your contact information is up-to-date on the membership list, especially your email address. Working Group Chairs, please make sure your membership list are up-to-date and if there are any new members, please send me their names and email addresses. This will help me keep the reviewer email list current.

On another note, if there are any new engineers within your company, one way to get them involved within IEEE is to have them review transaction papers. This could also become a good learning experience for these engineers. If there are any new, or newer, engineers within your company whom you feel are qualified, please send me their contact information. If we can get some new reviewers, maybe we can get them to attend meetings in the future and add to our membership base.

## **T&D ADCOM**

The Power Engineering Society is returning to the practice of holding a winter meeting, and will keep it a technical meeting. It will be held at a low cost destination site that is easy to get to. Every effort will be made to hold it on a week that does not include a holiday. This Subcommittee would like to see this meeting coordinated with DistribuTek.

## **WORKING GROUP REPORTS**

### ***DISTRIBUTION RELIABILITY (formerly SYSTEM DESIGN) – Cheri Warren, Chair***

The Group discussed recent regulatory issues, including reliability requirements in Pennsylvania, tree trimming in Illinois and Oregon and potential adoption of IEEE 1366-2003 in

Massachusetts. The Delaware commission recently adopted IEEE 1366. There are new requirements in Massachusetts and New York for utility inspection of metal structures, containing energized electrical equipment that the public can touch. Included are streetlight fixtures and manhole covers.

A letter sent to IEEE Standards questioned the work done on P1366, Guide for Electric Power Distribution Indices. Jim Bouford authored a reply pointing out the P1366 is a Guide, not a Standard as the letter's author believed. Jim also outlined the lengthy process where several data analysis methods were reviewed before choosing the 2.5 Beta method recommended in the Guide.

A presentation of benchmarking data from a large number of small, medium and large utilities showed that SAIDI is increasing everywhere. There are many possible explanations for this. Cheri Warren will do another survey for 2005 to see if the trend is continuing. Send Cheri your 2005 raw data.

Mani Vankata of KEMA Consulting presented recent KEMA work for a large utility. A new reliability index SAIDETx (SAIDI Exceeding Threshold) would only include customer interruptions that exceed a predetermined SAIDI threshold. It is thought that this index correlates customer satisfaction with reliability and thus may be useful for performance management such as budgeting and resource allocation. As an alternative, Carolina Power and Light has found that faults per mile provides the best correlation of customer satisfaction to reliability statistics.

#### **Task Force on Distribution Reliability Reporting – Bob Saint**

Bob Saint reported that the REC Transmission and Distribution Engineering Committee has updated the Incident Reporting Guide (RUS bulletin 161-2), but this has not been approved by NRECA. The previous Guide was issued in 1972. The Guide separates Supply and Distribution caused outages by allocating outages due to substation or transmission line problems to the Supply side. Distribution outages due to problems on the customer side of the Point of Common Coupling are not attributed to the Distribution side. Bob also presented results of a survey of 900 RECs, with 200 responses.

#### **Task Force on Reporting Practices – Rodney Robinson**

Rodney discussed the PAR for a proposed Guide on reporting practices. This Guide will incorporate information from three White Papers. The first paper (Collecting and Categorizing Information Related to Electric Power Distribution Interruption Events: Data Consistency and Categorization) was presented at the Annual meeting in San Francisco last June. Rodney presented highlights of the second paper, Collecting and Categorizing Information Related to Electric Power Distribution Interruption Events: Customer Interruption Data Collection within the Electric Power Distribution Industry. The Task Force then produced many ideas for the third paper, Collecting and Categorizing Information Related to Electric Power Distribution Interruption Events: Usage and Trending of the Data.

***SWITCHING AND OVERCURRENT PROTECTION – Betty Tobin, Chair***

This Group has a working liaison with the Insulated Conductor Committees efforts on Faulted Circuit Indicators (FCIs). John Banting updated us on the status of these Guides. P1216, the application guide for single-phase usage, is scheduled for reaffirmation. Work on the three-phase application guide has resulted in draft 11 that is out for ballot. P495, the standard for testing FCIs to ensure their performance, has expired and an effort is underway to update it. John also provided information on the status of Guides being written for broadband over power lines. See the Liaison Reports, later in this document, for more information.

Everyone was reminded to sign up for the web-based IEEE standards ballot committees. When you are signed up, you still have to visit the web site periodically to see if ballots are open.

***Task Force on Distribution Networks – Betty Tobin***

The Network Tutorial is posted on our IEEE private web site. Betty gave the user name and password to those attending the meeting. We discussed maintenance of network equipment and think that a White Paper may be appropriate here.

We discussed issues around the SCC 21 P1547 effort, acknowledging that the interconnection of Distributed Resources to secondary network raises unique challenges. All are urged to participate in the P1547 effort by attending those meetings or by signing up for the ballot committee. We will update this Task Force on P1547.

***DISTRIBUTED AUTOMATION – Anil Pahwa, Chair***

This Group did not meet.

***DISTRIBUTED RESOURCES INTEGRATION – Bob Saint, Chair***

This Group will have two panel session this year: Distributed Resources Impact on Distribution System Infrastructure; Distribution System Integration Solutions for Distributed Resources. There will also be a White Paper giving a summary of DR impact on power delivery systems. This paper can include topics such as the impact of connecting a number of DRs to a portion of the EPS, voltage issues and relay interfacing.

The PAR submitted for this Group was suggested, as IEEE suggests that this Group work closely with SCC 21 on DR issues and review the work of SCC 21. Bob updated the Group on the status of the P1547, Standard for Interconnecting Distributed Resources with the Electric Power System. P1547.1 which sets standards for testing of interconnection equipment is done. Work on P1547.2, P1547.3, P12547.4 and P1547.6 (the Application Guide, the Guide for Monitoring, Information Exchange and Control, the Guide for Design, Operation and Integration of DR Island Systems with the EPS, and the Recommended Practice for Interconnecting DR with Secondary Networks) are just getting underway. Members are encouraged to participate in these efforts, either by attending meetings or by signing up for the ballot committees. P1547.5

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addresses issues related to interconnection of DR, less than or equal to 10 MVA, that are connected to transmission lines.

This Group can review work for P1547.2 and perhaps write an appendix. If needed, we can have web meetings and/or extend the meeting time.

***DISTRIBUTION INTERNATIONAL PRACTICES***

This Group has been disbanded.

***ELECTRICAL TESTING OF WILDLIFE PROTECTORS – Shaun Whitey, Chair***

The working group met from 3:00pm to 4:30pm on Tuesday, January 17, 2006. Shaun Whitey reported on the state of the revised PAR to the group. The IEEE Standards Board (specifically NesCom) will review the group's revision to the original scope and purpose on March 30, 2006 and report back to the Chair.

***DISTRIBUTION SYSTEM PERFORMANCE – Scott Peele, Chair***

This Group did not meet.

***LIGHTNING PROTECTION – John McDaniel, Chair***

This Group is revising the Guide to Lightning Performance of Distribution Lines. This is really a Task Force that is part of the Line and Insulator Subcommittee Working Group. Since there are more distribution engineers at Distribution Subcommittee meetings, this Task Force meets at this time.

***VOLTAGE & VAR CONTROL – Greg Ardrey, Chair***

This Group did not meet.

***STRAY VOLTAGE – Charlie Williams, Chair***

We had two presentations on stray voltage regulatory issues in Wisconsin and in Idaho and also discussed a paper by Zipse. The Group agreed that we should publish a White Paper on this topic, and proceeded to work on definitions, using the ones in IEEE Standard 100 whenever possible. Charlie will e-mail copies of the information to all.

## **LIAISON REPORTS**

### ***Insulated Conductors – John Banting***

John provided updates on the ICC work on FCIs.

1. P495 Guide for Testing Faulted Circuit Indicators provides test code established definitions, service conditions, test procedures, and conditions for faulted circuit indicators (FCI) for use on power distribution systems. The guide is expired and will be brought up-to-date.
2. P1216 IEEE Guide for the Application of Faulted Circuit Indicators for 200 A, Single-Phase Underground Residential Distribution (URD) provides information on what a basic faulted circuit indicator (FCI) is designed to do and describes methods for selecting FCIs. The application of FCIs to single-phase, 200 amp URD circuits is described. Work is underway to reaffirm this Guide.
3. P1610 Guide for the Application of Faulted Circuit Indicators for Three-Phase Electric Power Systems guide provides information on what a Faulted Circuit Indicator (FCI) is designed to do and describes methods for selecting FCI's for use on three phase circuits. This application guide will complement the existing single-phase application guide. Draft 11 is out for ballot.

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

John updated the Committee on three standards related to broadband over power lines.

1. P1675 Standard for Broadband over Power Line Hardware was initiated in June 2004. The scope of this standard will be to provide testing and verification standards for the commonly used hardware, primarily couplers and enclosures, for Broadband over Power Line (BPL) installations, and provide standard installation methods to ensure compliance with applicable codes and standards. This project will not cover repeater/node hardware, data transmission, protocols, or other aspects of BPL related to the internal workings of this technology. John will forward the latest draft of this document to Betty Tobin so she can send it to the Committee.
2. P1775 Powerline Communication Equipment - Electromagnetic Compatibility (EMC) Requirements - Testing and Measurement Methods began in May 2005. This standard will be electromagnetic compatibility (EMC) criteria, and consensus test and measurements procedure for broadband Power Line Communication (also known as BPL) equipment and installations. The standard will reference existing national and international standards for BPL equipment and installations. It will not include the specific emission limits, which are subject to national regulations.
3. P1901 Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications is newly proposed. The project will develop a standard for high speed (>100 Mbps at the physical layer) communication devices via alternating current electric power lines, so called Broadband over Power Line (BPL) devices. The standard will use transmission frequencies below 100 MHz. This standard is limited to the physical layer and the medium access sub-layer of the data link layer, as defined by the International Organization for Standardization (ISO) Open Systems Interconnection (OSI) Basic Reference Model.

***Surge Protective Devices***

1. C62.22 IEEE Guide for the Connection of Surge Arresters to Protect Insulated, Shielded Electric Power Cable Systems was balloted recently.
2. C62.11 IEEE Standard for Metal-Oxide Surge Arresters for AC Power Circuits (> 1 kV) is being redone.

***NESC – Richard Hensel***

1. The NESC Subcommittees met to finalize the contents of the 2007 NESC this past September and October. The 2007 NESC is scheduled to be published August 1, 2006 and will take effect nationally on February 1, 2007. Individual states determine whether they will automatically adopt new revisions to the NESC.
2. I represent the Distribution Subcommittee on the NESC Subcommittee 5 – Overhead Lines - Strength and Loading. I was unable to attend the 2007 NESC voting meeting due to work commitments. Rusty Soderberg, a Distribution Standards Engineer from Consumers Energy, attended and voted in my place. Rusty is an alternate member of NESC Subcommittee 5 representing IEEE.
3. Our Strength and Loading Subcommittee reviewed 77 change proposals and reviewed a record 634 comments to these change proposals.
4. We received 203 comments on the proposal that would have eliminated the 60' exclusion for extreme winds on distribution lines. As a result of these comments, we were able to retain the 60' exclusion.
5. We received 101 comments on the proposal that would have required considering the reduced strength of wood distribution poles above the lines. We were able to modify this proposal so that 55 foot and shorter wood poles can continue to be designed based on the strength at the ground line.
6. We received 95 comments on the proposal to completely rewrite the Overhead Lines Loadings and Strengths Chapters to incorporate Reliability Based design. As a result of these comments, we were able to defeat this proposal.
7. At this time, I would like to discuss a few of the changes in the 2007 NESC. As I already mentioned, when designing wood pole structures taller than 55 feet it will be necessary to consider reduced pole strength above ground.
8. There will be a new loading case 250D for Extreme Ice With Concurrent Wind Loading. As with the existing Extreme Wind Loading case 250C, the new loading case will only apply to structures taller than 60 feet above ground.
9. The Subcommittee has decided to eliminate the Rule 253 and 261 Alternate Methods by July 31, 2010. The effective date of this change was moved out to 2010 to give companies time to

change their standards manuals. This change will allow Grade B and Grade C wood poles to have spans that are 4% and 6% longer respectively.

10. The 2007 NESC will require Grade B construction over navigable waterways that require water crossing permits. During emergencies, rescue efforts using navigable waterways have been hampered by down power lines.

11. Finally, the 2007 NESC will no longer contain the terms urban and rural. Rural areas often become urban areas during the life of a line.

## **DISCUSSION**

There are several changes pertaining to Working Groups. We thank Don Hill for co-chairing the Task Force on Reporting Practices and wish him well in his new endeavors. Val Werner is welcomed as the new co-chair for that Task Force. We decided that the Working Group on Distribution International Practices is disbanded.

The next General meeting will be in Montreal, Canada. This Subcommittee is sponsoring several panel sessions at that meeting, and will try to avoid conflicts between panel session and working group schedules. None of the Working Groups plan to meet at the T&D conference in Dallas this year.

The Committee discussed several ideas on how to increase Subcommittee membership and in particular encourage participation of new engineers. We should find ways to bring the newer engineers to the meetings, encourage them to review papers and perhaps participate in web conferences.

Remember that Jim Burke coordinates the Distribution Award. Contact him with names of potential candidates for this Award.

## **PRESENTATIONS**

John McDaniel gave a presentation on how to get transaction grade papers accepted and published. Rodney will e-mail Betty a copy of this to send out to Committee members.

## **PANEL PRESENTATIONS**

The following Panel Presentations are planned for subsequent meetings:

### **Distributed Resource Integration Working Group**

1. Distributed Resources Impact on Distribution System Infrastructure

2. Distribution System Integration Solutions for Distributed Resources

**Distribution Automation Working Group**

1. Use of Distribution Automation Information for Operation and Design of Distribution Systems

**Appendix: Current Membership Roster**

Chair: Warren, C., Albany, NY  
Vice Chair: McDaniel, J., Belleville, MI  
Secretary: Tobin, E., Seattle, WA

Ardrey, G., Beloit, WI  
Banting, J., Pewaukee, WI  
Bouford, J., Northborough, MA  
Burke, J., Cary, NC  
Caswell, H., Portland, OR  
DeNardo, C., Milwaukee, WI  
Fijnvandraat, C., Andover, MA  
Frost, K., Oakbrook Terrace, IL  
Gilmer, D., Craig, CO  
Gupta, RP, Kanpur, India  
Hall, D., Newark, DE  
Hensel, D., Jackson, MI  
Khodaie, M., Albuquerque, NM  
Lacy, S., Fontana, CA  
McDermott, T., Pittsburgh, PA  
Obenchain, G., Washington, DC  
Pahwa, A., Manhattan, KS  
Peele, S., Raleigh, NC  
Pehosh, M., Arlington, VA  
Perry, C., Knoxville, TN  
Pinto, H., Medford, NY

Riley, C., Forest Park, GA  
Robinson, R., Topeka, KS  
Sabin, D, Knoxville, TN  
Saint, B., Arlington, VA  
Siew, C., Burnaby, BC, Canada  
Smith, J., Phoenix, AZ  
Taylor, L., Charlotte, NC  
Viglietta, J., Philadelphia, PA  
Walling, R., Schenectady, NY  
Ward, D., Richmond, VA  
Welch, G., Raleigh, NC  
Werner, V., Milwaukee, WI  
Welch, L., Atlanta, GA  
Williams, C., Maitland, FL  
Yuen, D., Bellevue, WA