

# IEEE Distribution Subcommittee

- Unapproved Meeting Minutes -

January 31, 2001, 1:00 to 3:00 PM

Columbus, Ohio, USA

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Vice Chair Cheri Warren called the IEEE Distribution Subcommittee meeting to order at 1:05 PM. She chaired the meeting for Chair Dan Ward, who was unable to attend the meeting.

### **Administrative**

The meeting attendees were introduced. 38 people signed the meeting attendance list. 19 attendees were IEEE Distribution Subcommittee members. (See Appendix 1.) Gene Baker, who was the previous subcommittee secretary, mailed the minutes from the last meeting to subcommittee members soon after the IEEE/PES Summer 2000 Meeting in Seattle. However, the Seattle minutes were not approved at this Columbus meeting, as a copy of them was not available at this meeting. However, the subcommittee secretary will post the Seattle minutes to the subcommittee web page as an action item.

### **Chair Report**

No report was given as Dan Ward was not present.

### **Vice Chair Report**

The Distribution Subcommittee is behind on paper reviews due to a large number of papers being processed. However, the backlog status should be improved in the future, as IEEE is moving away from the current paper review procedure and towards a new procedure that will involve electronic distribution of Microsoft Word and Adobe Acrobat PDF files. In order to help in expediting reviews, the vice chair requested that the distribution subcommittee members present add their email addresses to the attendance list. She also requested that the subcommittee members present focus on returning any late paper reviews.

## **Working Group Reports**

### ***System Design***

The Working Group on System Design and its task forces met on Wednesday, January 31, 2001 for four hours. About 35 attendees were at the meeting.

### **Task Force on Outage Reporting Practices**

This group met from 8:15 to 8:20. Its chair, Dan Pearson, was unable to attend this meeting due to the Californian power crisis. The TF paper will be submitted by the end of February and will be presented at the SPM in Vancouver if accepted.

### **TF for Reliability Indices P1366**

The meeting was full of great discussion and many good points were made. The main debate surrounded the "Major Event" definition with four broad topics:

1. Original definition
2. 3s on an annual or multiple year basis
3. NWS, 10% of an operating region or company...
4. Number of Events per number of Customers/Event per CMI/event

During the last six months, the group performed an informal members survey with the following four questions:

1. How many times have you seen 10% of your "total company customers served" out of service during a storm?
2. How many times have you seen 10% of the "customers served in an operating region" out of service during a storm?
3. What is your storm definition?
4. What is your definition of a customer?

### **Task Force on System Design from a Reliability Perspective**

This task force met for thirty minutes and was chaired by Jim Bouford. Its intent is to create a document on design practices that is intended for new distribution engineers. It will provide a method to provide the collected wisdom of this group to those who have not had time to collect it. The following people have volunteered to help Jim:

The working group also held a round table open discussion. No new business was identified at the meeting. The complete minutes for the meeting are posted on the Internet at <http://grouper.ieee.org/groups/td/dist/sd/>.

### ***Switching and Overcurrent Protection***

The working group met concurrent with its two task forces from 8:00 to 11:00 AM on Tuesday, January 30, 2001.

### **Task Force on Distribution Networks**

The Task Force on Distribution Networks reviewed the status of the network tutorial. Twelve of the fifteen chapters are close to completion. The task force is contacting IEEE to establish a web site for the tutorial's chapters. The task force also discussed power factor case studies.

### **Task Force on the Application Guide for Faulted Circuit Indicators**

The Task Force on the Application Guide for Faulted Circuit Indicators reported that the single-phase guide has been accepted by IEEE and will soon be printed. Work is now beginning on the three-phase guide. The new PAR for this guide will include "three-phase, underground" its title but will not include an amperage value.

The working group members also discussed the progress of IEEE P1547, which is producing a *Standard for Distributed Resources Interconnected with Electric Power Systems*. IEEE SCC21 is the sponsor of P1547. This standard will be balloted soon. The Internet web site for the standard is located at <http://grouper.ieee.org/groups/scc21/1547/>. The Working Group on Switching and Overcurrent Protection is considering whether an application guide will be needed as demand grows for distributed generation.

Minutes for the Working Group on Switching and Overcurrent Protection are now being posted on the Internet at <http://grouper.ieee.org/groups/td/dist/sop/>.

### **Distribution Voltage Quality**

The Voltage Quality Working Group met and its task forces met on Tuesday, January 30. Jim Burke chaired the working group meeting. It reviewed work being completed by its task forces and reviewed the status of IEEE Std 1250, which is to be balloted for reaffirmation in the coming months.

### **Task Force on Distribution Custom Power**

Dan Sabin reports that the Task Force on Distribution Custom Power focused its meeting to have a working meeting to review draft 5 of IEEE P1409. The IEEE P1409 group is 2½ years into their PAR. Numerous task force members have been charged with assignments for draft 6, which is due by May 1. No panel sessions were requested.

### **Task Force on Voltage Flicker**

The Task Force on Voltage Flicker is sponsoring a tutorial at the IEEE/PES Winter 2001 Meeting on Thursday, February 1. It would like to request a panel session for the forthcoming IEEE Transmission and Distribution Conference and Exposition in Atlanta. The task force is trying to keep a close relationship with IEC flicker meter and measurement standards.

### **Task Force on Voltage Sag Indices**

At the Task Force on Voltage Sag Indices, Co Chair Math Bollen gave a presentation that highlighted some of the issues in draft 1 of P1547. Jim Burke reported that there was also a discussion on how to compare sags indices between utilities. Co Chair Mike Sheehan requested volunteers to develop specific sections of IEEE P1547. The volunteers were Math Bollen, Dan Sabin, and Chris Melhorn. No panel sessions were requested.

Minutes for the Working Group on Distribution Voltage Quality are now being posted on the Internet at <http://grouper.ieee.org/groups/td/dist/vq/>.

### ***Separable Conductors***

Dick Arndt reported that the primary activity of the working group meeting was to discuss the status of the application guide. The technical ballot is now complete, but the application guide has been rejected for administrative purposes. The working group is looking for completion within the next six months after formatting issues and administrative issues are resolved.

The working group will only need one session in the future on the basis that it has completed its guide. The group is planning to transition to a new chair over the next few months, as Dick Arndt plans to reduce the frequency of his attendance at future IEEE/PES meetings. The subcommittee applauded Dick Arndt for his 35 years of service and he expressed his gratitude.

### ***Distribution Automation***

The Working Group on Distribution Automation met on Monday afternoon. John Redmon reported that the working group is planning for a panel session on effects on distribution automation on reliability for the IEEE/PES Summer 2001 Meeting. The focus will be on the operation side and will compliment other reliability related panels. It will be entitled, "Impact of Automation on Distribution Reliability." Kay Clinard, Anil Pahwa, and John Redmon will be the presenters. John Redmon reported that he was also looking to organize a second panel session on outage management systems. If it is organized in time, he will request that it be scheduled during the IEEE/PES Summer 2001 Meeting. If it is not organized in time, then he will request the panel session be scheduled for the IEEE/PES Winter 2002 Meeting in New York.

The working group's meeting focused on an update on the its going work to complete its tutorial on distribution automation. Redmon reported that he needs volunteers to work on the tutorial.

Roy Hoffman and Dave Blew gave presentations on outage management. The presentations are posted to the following location on the Internet: <http://grouper.ieee.org/groups/td/dist/da/>. He requested the same time Monday afternoon time slot for the next working group meeting.

### ***Distribution International Practices***

The Chair of the Working Group on Distribution International Practices, Bob Owen, could not attend the IEEE/PES Winter 2001 Meeting. However, Jim Burke volunteered to chair the meeting. Only other one person arrived for the meeting, so no meeting was held. After this report, the subcommittee discussed the scope of the working group and fielded ideas for how to improve its attendance and focus its scope.

### ***Distribution Maintenance***

Charlie Williams reported that the Working Group on Distribution Maintenance met on Monday afternoon. It is currently looking at the component, driver, activity, benefit, and assessment of distribution maintenance for those items. The working group plans to create initial drafts of a working group document on cable, poles, arrestors, and transformer. The initial drafts are due

from working group members by May 1 and will be distributed and reviewed by the next meeting.

No panel sessions were requested at this time. The working group needs a smaller room for the next meeting, but the size of the room was reported as being adequate.

### ***Distribution Generation Effects on System Design***

Reigh Walling reported that, at the last meeting, Dan Ward requested that he look into forming a new working group on the effect of distributed generation on system design. He reported that he is going to soon chair a panel session sponsored by the IEEE Transmission and Distribution Committee.

The subcommittee discussed the formation of the new working group and decided that it would be best to complete the planned work as a task force of the Distribution Subcommittee's Working Group on System Design. Reigh requested that a room be requested for the task force meeting and a time slot be planned. Tuesday afternoon was requested.

## **Liaison Reports**

### ***Insulated Conductors***

No report was given.

### ***Power System Relays***

No report was given.

### ***Regional Committees***

No report was given and the liaison report will be removed from future meeting agendas.

### ***Surge Protection Devices***

Reigh Walling reported that the next revision of C62.22, the metal oxide arrester application guide, is heading for the final draft stage. The guide will have increased coverage of issues related to arrester energy capability. In addition, arrester application for the protection of overhead transmission and distribution line insulation will be separated from equipment protection.

### ***Switchgear***

The next meeting is in the spring in Charleston, South Carolina. The Reclosers and Sectionalizers Subcommittee has been renamed to Reclosers and Other Distribution Equipment (RODE).

### ***Transformers***

No report was given. John McDaniel was chosen as the new liaison.

## **SCC 21**

Reigh Walling reported that the draft P1547, *Standard for Distributed Resources Interconnected with Electric Power Systems*, is going out to ballot very soon. SCC21 is establishing a number

of distributed resource related working groups, which may overlap with present and contemplated activities within the T&D Committee. These working groups include ones focused on distributed resource applications, modeling, and of specific interest to the Distribution Subcommittee, a working group on application of distributed resources to secondary grid and spot networks.

## **Standards Activities**

### ***ANSI C37.73***

Reigh Walling reported that C37.73 is complete and published. The group is now working on ANSI C74. Ray Capra reported that the revision to the Recloser Standard, C37.60, is currently out for ballot. The focus is now on combining C37.71, C37.72, and C37.73 into one standard covering distribution padmounted, subsurface, and subway switches.

### ***ANSI C84.1***

Walt Ross reported that there is currently a move to reaffirm C84.1.

### ***ANSI C119.2***

Frank Stepniak will be the new liaison.

## **Open Discussion**

Dick Hensel reported that the 2002 NESC will be published this spring and will be valid for five years.

Tom McDermott reported that the IEEE Distribution System Analysis Subcommittee has revised the four radial test feeders that were originally presented at the 1991 Winter Power Meeting. A fifth test feeder has been added to focus on transformer connections. A paper was presented at the 2001 Winter Power Meeting and should be published in the Transactions. This paper presents an updated version of the same test feeders along with a simple system that can be used to test three-phase transformer models. The test feeder paper and data are posted on the Internet at <http://ewh.ieee.org/soc/pes/dsacom/testfeeders.html>.

Harry Hayes volunteered to make a presentation at the next IEEE Distribution Subcommittee meeting on what is happening in the area of cable distribution. His presentation will be entitled, "Cable Standards: An Overview of Changes."

Reigh Walling reported that he has been asked to form a working group on the practical element of ferroresonance, but that he is going to respond that it may be premature.

Reigh Walling also reported that the Working Group on Modeling and Analysis of Distributed Generation, under the General Systems Subcommittee, has decided to undertake the issue of distributed generation effects on distribution systems and protection, in addition to their scope of developing models for distributed generators, particularly inverter-interfaced devices. This may overlap with the work contemplated for a working group or task force under the Distribution Subcommittee.

Art Westrom announced the need for nominations for the award for Excellence in Distribution award.

A UCA Users group is being formed that is comprised of vendors and users. It is being facilitated by KCA. Two dozen utilities are involved in the process.

## **Presentation**

Roger Bergeron made a presentation on *New Architecture of the Distribution System using the Electronic Transformer*. The presentation is posted to the subcommittee Internet site at <http://grouper.ieee.org/groups/td/dist/presentations/>.



## Appendix 1: Attendance List

The following tables list the attendees of the IEEE Distribution Subcommittee meeting on January 31, 2001.

**Table 1: IEEE Distribution Subcommittee Members**

Name	Company
Dick H. Arndt	Consultant
Ernest E Baker	Florida Power Corporation
John F Banting	Cooper Power Systems
James L. Burke	ABB/ESC
Ray L. Capra	Consultant
K. Clinard	KC Associates
Dick Hensel	Consumer Energy M-462
Tom Kulas	Northern States Power Co.
John M. Makal	Cooper Power Systems
John McDaniel	Detroit Edison Company
Tom McDermott	Electrotek Concepts, Inc.
John R. Redmon	John R. Redmon, Inc
Walter J. Ros	General Electric Company
Dan Sabin	Electrotek Concepts, Inc.
Frank Stepniak	ElastNameimold/T&B
Elisabeth A Tobin	Seattle City Light
Reigh A. Walling	GE Power Systems Energy Consulting
Cheri Warren	Navigant Consulting, Inc.
Art Westrom	Westrom Technologies
Charlie Williams	Florida Power Corp
<b>Total</b>	<b>20</b>

**Table 2: Guests**

Name	Company
Greg Ardrey	Alliant Energy
Jerry L. Baston	Alliant Energy
Roger Bergeron	Hydro Québec
Vesna Borozan	University Ss. Kiril and Metodis
Jim Bouford	National Grid
Jim Cheney	Arizona Public Service
Ali Chowdhury	Midamerican Energy Company
Carey Cook	S&C Electric Company
Donald F. Hall	CES International
Harry Hayes	Ameren Services
Kevin Jones	Stoner Associates
Thomas S. Key	EPRI PEAC
Jerry Murray	Oregon PUC
Gary Rackliffe	ABB Power T&D Company

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John Spare	KEMA Consulting
Val Warner	Wisconsin Electric
James Wikston	Hatch Associates Ltd.
Rich Zinger	Sicame Corp
<b>Total</b>	<b>18</b>

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## **Appendix 2: Panel Session Requests**

### ***Impact Of Automation On Distribution Reliability***

The Working Group on Distribution Automation has requested this panel session for the IEEE/PES Summer 2001 Meeting.

#### **Description**

In the last decade, we saw a plethora of activity related to distribution automation. Many had hoped that by the end of the 20th century most utilities would embark on large-scale automation of their distribution facilities. However, that did not happen since many utilities found it difficult to justify distribution automation based on cost-benefit. Business uncertainties due to deregulation and restructuring of the power industry led to limited implementations of distribution automation. However, after the deregulation and restructuring issues are settled, distribution automation activities should increase. Performance based rates will ensure that power distribution companies look at automation to improve system performance and reliability to get competitive edge. Instead of embarking on mega projects, it is time to “think small” and use a bottom-up instead of top-down approach. The selection of a distribution automation strategy for implementation should always be based on need.

#### **Panelists**

*Service Restoration Using Distribution Automation*  
Anil Pahwa, Kansas State University

*Traditional versus Automated Approaches To Reliability*  
John Redmon, John R. Redmon, Inc.

*Which Is More Economical, Local or Remote VAR Management*  
Kay Clinard, KC Associates

### ***Panel Session on Voltage Flicker***

The Task Force on Voltage Flicker has requested this panel session for the 2001 IEEE Transmission and Distribution Conference and Expo.

#### **Description**

No description submitted.

#### **Panelists**

No panelists submitted.

## Appendix 4: Current Membership Roster

The following list presents the 46 current members of the IEEE Distribution Subcommittee.

Chair: Ward, D.J., Richmond, VA  
Vice Chair: Warren, C., Albany, NY  
Secretary: Sabin, D., Knoxville, TN

Arndt, D.H., Waukesha, WI  
Baker, E.E., Maitland, FL  
Banting, J.F., Pewaukee, WI  
Barker, P., Schenectady, NY  
Buch, J.F., Madison, WI  
Burke, J.L., Raleigh, NC  
Capra, R.L., Lafayette, CA  
Chebli, E.A., New York, NY  
Clemons, L.G., Detroit, MI  
Clinard, K., Sammashi, WA  
Conrad, L., Plainsfield, IN  
Ehrlich, R., Kennett SQ, PA  
El-Keib, A.A., Tuscaloosa, AL  
Gentile, T., Westboro, MA  
Gilmer, D., Steamboat Springs, CO  
Grainger, J.J., Raleigh, NC  
Hensel, D., Jackson, MI  
Horman, D.B., Salt Lake City, UT  
Kulas, T., Minneapolis, MN  
Landman, B., North Hampton, NH  
Makal, J.M., Pewaukee, WI  
Mancao, R., Lusby, MD

McDaniel, J., Belleville, MI  
McDermott, T., Jefferson Hills, PA  
Mejdrich, R.E., Citrus Heights, CA  
Mukherji, R., Houston, TX  
Oedemann, R.J., Philadelphia, PA  
Owen, B., Franksville, WI  
Pearson, D., San Francisco, CA  
Redmon, J.R., West Orange, NJ  
Ros, W.J., Schenectady, NY  
Sheehan, M.T., Seattle, WA  
Short, T., Schenectady, NY  
Smith, D.R., Wilmerding, PA  
Stepniak, F., Hackettstown, NJ  
Tengdin, J.T., San Clemente, CA  
Tobin, E.A., Seattle, WA  
Vogel, S., New York, NY  
Vollkommer, H., Columbus, OH  
Walling, R.A., Schenectady, NY  
Welch, G., Raleigh, NC  
Westrom, A., Stone Mountain, GA  
Williams, C., Maitland, FL

## Appendix 4: Logistical Notes

The following are logistical notes from the meeting:

- Request a smaller room for the Distribution Maintenance Group for the next meeting.
- Request a room for the Task Force on Distributed Generation Effects on System Design for Tuesday afternoon, preferably from 1:00 to 3:00 PM.
- Determine if conflict with meeting times for the Distribution Automaton and International Practices can be resolved.
- Request panel session for the IEEE/PES Summer 2001 Meeting entitled, "Impact of Automation on Distribution Reliability."
- Request panel session on Voltage Flicker for IEEE T&D Conference and Exposition in Atlanta.
- Requests a larger room for the Working Group on System Design meeting room and the meeting room of its task forces.
- The task forces of the Working Group on System Design meet concurrently with the working group. The working group would like the working groups and the task forces listed in the program as running concurrently in the same room according to the following schedule:
  - Working Group on System Design from 8:00 AM to 12:00 PM
  - Task Force on Reporting Practices from 8:00 AM to 9:00 AM
  - Task Force on System Design from a Reliability Perspective from 9:00 AM to 10:00 AM
  - Task Force on Reliability Indices from 10:00 AM to 11:00 AM