

# IEEE Power Quality Subcommittee Meeting Minutes

January 7, 2008

San Antonio, TX

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The meeting was opened at 1:00 pm on January 7, 2008 in the Frio Room of the San Antonio Hyatt Regency. The Power Quality Subcommittee website is

<http://grouper.ieee.org/groups/td/pq>

## Introductions

Chair: Mark Halpin

Vice-Chair: Dan Sabin

Secretary: Tim Unruh

## Previous Meeting Minutes

A motion was made to approve the minutes by Randy Collins. A second to approve the minutes was made by Erich Gunther. The motion carried.

## Power Quality Subcommittee Membership

The membership list was presented and reviewed. It was noted that the membership list was sent out on Friday, January 5, 2008 to all committee members. The list contains guest as well as member listings. At the time of the meeting, the list contained 16 members, out of a total roster of 40.

## Organization Chart Review

The organization chart for the Power Quality Subcommittee was reviewed by the group. A copy of the updated chart is attached to these minutes. Changes made to the chart include: Removal of the Embedded Solutions and Equipment Susceptibility under the Power Quality Solutions Working Group.

## Meeting Attendance Issue

Mark Halpin discussed the overall meeting attendance at our various power quality meetings. Attendance has dropped, and getting acknowledgement from chairs of needed meetings at this Winter Technical meeting were challenging. Mark requested that chairs work to identify new attendees at their meetings, and to work to get them involved by asking them to participate. He stressed that often we get new interest, but tend to shut them out by not inviting them to participate.

## Reports from Top Level Chairs

The following provided a brief overview of their current activities:

Monitoring Electric Power – Randy Collins

Harmonics – Bill Moncrief

Voltage Quality – Dennis Hansen

ICHQP Exec Committee – Mark Halpin provided for Paulo Ribiero

PQ Solutions – Dave Mueller

PQ Activities – Tim Unruh provided for Wilsun Xu

At the end of these reports, Mark Halpin provided an overview of the difference between SCC 22 Power Quality Standards Coordinating Committee and the Power Quality

Subcommittee. He emphasized that the PQ Subcommittee was more towards developing standards, while the SCC22 group was more focused on coordination of the various power quality related standards.

### **Panel Sessions Update**

Dennis Hansen reviewed the Power Quality panel sessions that were planned for future meetings. A copy of the panel sessions is attached to the minutes.

### **Meeting Schedule Update**

The meeting schedule was discussed. During the meeting, each working group chair provided input regarding their need for a meeting at the general meeting in Pittsburgh, PA.

### **Next Meeting**

The next meeting of the subcommittee will be with the IEEE/PES General meeting in Pittsburgh, PA, July 20-24, 2008. It is anticipated that the Power Quality Subcommittee will be held on Wednesday of that week. The proposed schedule is attached to the minutes.

At the end of the meeting, Mark Halpin gave a presentation about the changing nature of the industry application society color book series. The presentation is attached as part of the minutes.

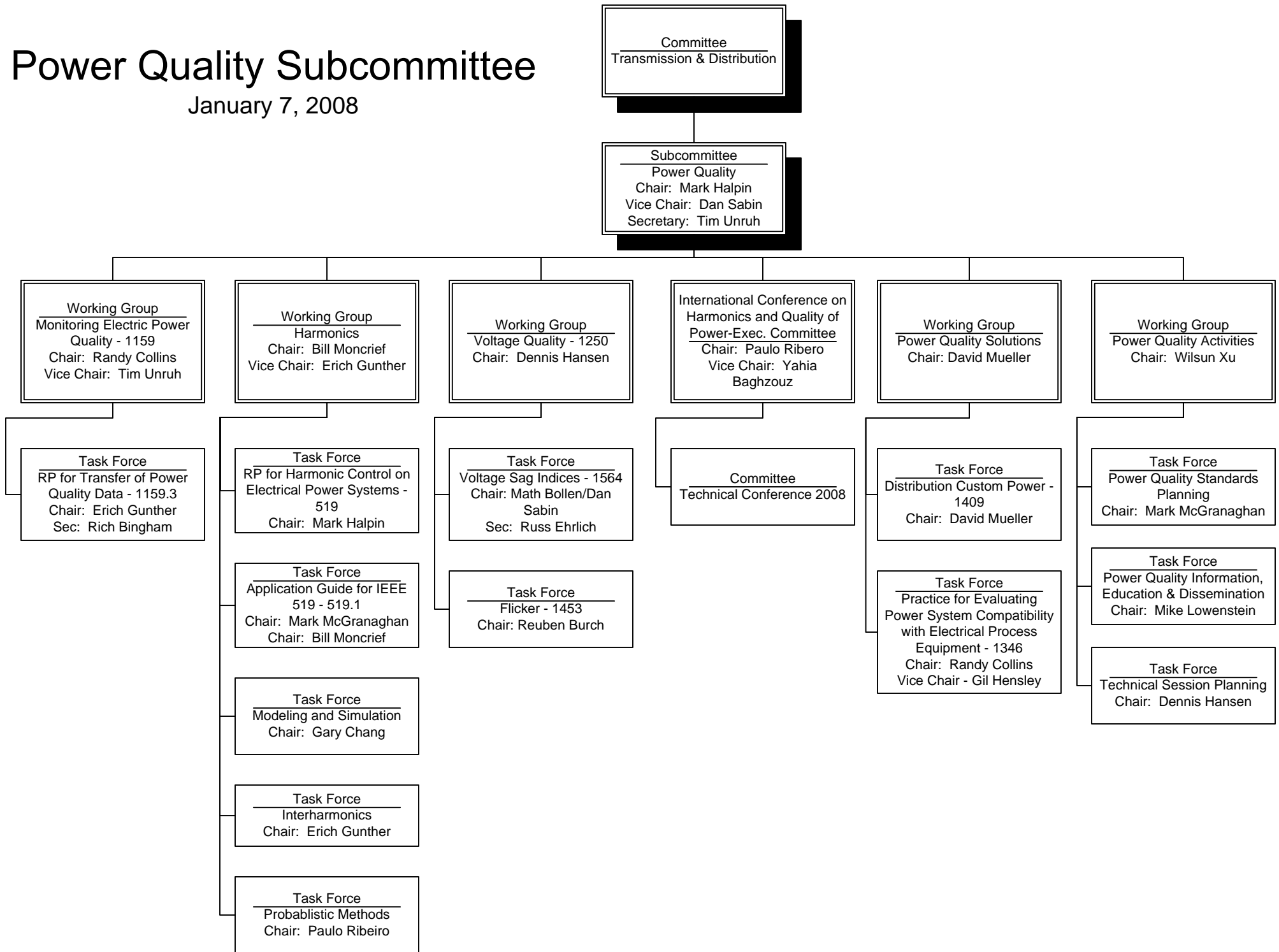
### **Attendees**

The following persons attended the meeting on January 7, 2008.

Bingham, Richard  
Brogan, John  
Collins, Randy  
Cryer, Curtis  
Ehrlich, Russ  
Gunther, Erich  
Hallmark, Daryl  
Halpin, Mark  
Hansen, Dennis  
Henville, Charles  
Lowenstein, Michael  
McEachern, Alex  
Moncrief, Bill  
Mueller, David  
Phillips, Dean  
Sabin, Dan  
Saenz, Ramon  
Safi, Mahmoud  
Saint, Bob  
Sedziol, Ken  
Simard, Georges  
Swearingen, Michael  
Unruh, Timothy  
Waclawiak, Marek  
Williams, Charles

# Power Quality Subcommittee

January 7, 2008



Committee  
Transmission & Distribution

Subcommittee  
Power Quality  
Chair: Mark Halpin  
Vice Chair: Dan Sabin  
Secretary: Tim Unruh

Working Group  
Monitoring Electric Power  
Quality - 1159  
Chair: Randy Collins  
Vice Chair: Tim Unruh

Working Group  
Harmonics  
Chair: Bill Moncrief  
Vice Chair: Erich Gunther

Working Group  
Voltage Quality - 1250  
Chair: Dennis Hansen

International Conference on  
Harmonics and Quality of  
Power-Exec. Committee  
Chair: Paulo Ribeiro  
Vice Chair: Yahia  
Baghzouz

Working Group  
Power Quality Solutions  
Chair: David Mueller

Working Group  
Power Quality Activities  
Chair: Wilsun Xu

Task Force  
RP for Transfer of Power  
Quality Data - 1159.3  
Chair: Erich Gunther  
Sec: Rich Bingham

Task Force  
RP for Harmonic Control on  
Electrical Power Systems -  
519  
Chair: Mark Halpin

Task Force  
Application Guide for IEEE  
519 - 519.1  
Chair: Mark McGranaghan  
Chair: Bill Moncrief

Task Force  
Modeling and Simulation  
Chair: Gary Chang

Task Force  
Interharmonics  
Chair: Erich Gunther

Task Force  
Probabilistic Methods  
Chair: Paulo Ribeiro

Task Force  
Voltage Sag Indices - 1564  
Chair: Math Bollen/Dan  
Sabin  
Sec: Russ Ehrlich

Task Force  
Flicker - 1453  
Chair: Reuben Burch

Committee  
Technical Conference 2008

Task Force  
Distribution Custom Power -  
1409  
Chair: David Mueller

Task Force  
Practice for Evaluating  
Power System Compatibility  
with Electrical Process  
Equipment - 1346  
Chair: Randy Collins  
Vice Chair - Gil Hensley

Task Force  
Power Quality Standards  
Planning  
Chair: Mark McGranaghan

Task Force  
Power Quality Information,  
Education & Dissemination  
Chair: Mike Lowenstein

Task Force  
Technical Session Planning  
Chair: Dennis Hansen



## IEEE PES T&D Power Quality Subcommittee Panel Session and Tutorial Plan

Last revised: 4 Jan 2008

This revision includes the re-formed 519 misapplications panel for SM 2008 and the withdrawal of the PQ Data panel from PSCE 2009.

### Panels at a Glance

Priority	Upcoming Meetings														
	T&D 2008 Apr 21-24 Chicago			SM 2008 Jul 20-24 Pittsburgh			PSCE 2009 Mar 15-18 Seattle			SM 2009 Jul 26-30 Calgary					
	Num	Designator	Stat	Num	Designator	Stat	Num	Designator	Stat	Num	Designator	Stat	Num	Designator	Stat
A	3	<i>1159</i>	Conf	10	<i>EAF Model</i>	<i>Chr</i>				T1	Flicker Tut	Chr			
B	4	<i>PQ Sol'ns</i>	Conf	1	<i>519 MisApp</i>	<i>Chr</i>				12	Measure HV	Prel			
C	5	<i>Prevention</i>	Conf	2	<i>Interharm</i>	<i>Chr</i>									
D				XX	XXXXXX	XX				XX	XXXXXX	XX			

Status Codes	Prel	Preliminary idea; no chair yet found.	<i>Italics</i>	PQ Subcom. has <b>approved</b> panel.	Conf	TCPC has <b>confirmed</b> panel.
	Chr	Chair found and agreed to organize.	Sub	Panel has been <b>submitted</b> to TCPC.	Schd	Room and time have been <b>scheduled</b> .

### Panel and Tutorial Descriptions and Ideas with Chairs

(Numbers correspond to those in the table above.)

- |  |   |
|--|---|
| 1. Common <b>errors</b> and misconceptions in the application of IEEE <b>519</b> | Chair – Paulo Ribeiro                   |
| 2. <b>Interharmonics</b> Case Studies and TD = THD + TID                         | Chair—Erich Gunther                     |
| 3. Monitoring and Characterization of Power Quality <b>1159 &amp; 1159.1</b> .   | Co-chairs Charles Perry & Randy Collins |
| 4. <b>PQ Solutions</b> – both Supply-side and Utilization-side.                  | Chair – Dave Mueller & Dan Sabin        |
| 5. <b>Preventing Electrical Pollution</b> from Entering the Power System.        | Chair – Dennis Hansen                   |

For questions or comments about this plan contact Dennis Hansen

[dennis.hansen@pacificorp.com](mailto:dennis.hansen@pacificorp.com)  
801-220-4816



- |  |                         |
|--|-------------------------|
| 6. The <b>Economics</b> of <b>PQ</b> —tie in to political-legal?                         | Chair—Mark McGranaghan? |
| 7. <b>Integration</b> of Monitoring Data   | Chair—Mark McGranaghan? |
| 8. Experience with <b>PQ Indices</b> .   | Chair—Rao Thallam       |
| 9. PQ in <b>Data Centers</b>   | Chair—Mike Lowenstein   |
| 10. Measurement Techniques and <b>Modeling</b> Issues<br>of <b>Electric Arc Furnaces</b> | Chair—Gary Chang        |
| 11. PQ Considerations for Applying <b>Capacitors</b> in <b>Substations</b>               | Chair—Erich Gunther     |
| 12. <b>Measuring</b> Harmonics on <b>HV</b> and EHV Systems                              | Chair—Randy Horton?     |
| 13. <b>Advanced</b> Applications for PQ <b>Monitoring</b>                                | Chair—Dan Sabin         |
| 14. Flicker and harmonics <b>measurement</b> issues and experience                       | Chair—?                 |
| 15. <b>Cost</b> of <b>Flicker</b>  | Chair—Reuben Burch      |

## Tutorials

- |  |                    |
|--|--------------------|
| T1. Understanding IEEE 1453 <b>Flicker</b> | Chair—Reuben Burch |
|--|--------------------|

## Power Quality Subcommittee Meetings

July 20-24, 2008, Pittsburgh, PA

Meeting Name	Day	Time	Chair	Chair E-Mail
International Conference on Harmonics and Quality of Power (ICHQP) Executive Committee	Monday	1:00 PM to 2:00 PM	Yahia Baghzouz	<a href="mailto:eebaq@egr.unlv.edu">eebaq@egr.unlv.edu</a>
TF on Transfer of Power Quality Data (1159.3)	Monday	1:00 PM to 2:00 PM	Erich Gunther	<a href="mailto:erich@enernex.com">erich@enernex.com</a>
Stray Voltage Holding Spot (scheduled by others)	Monday	2:00 PM to 5:00 PM	Chuck DeNardo	<a href="mailto:chuck.denardo@we-energies.com">chuck.denardo@we-energies.com</a>
WG on Monitoring Electric Power Quality (1159)	Tuesday	8:00 to 10:00 AM	Randy Collins	<a href="mailto:randy.collins@ces.clemson.edu">randy.collins@ces.clemson.edu</a>
Voltage Quality WG (1250)	Tuesday	10:00 AM to 12:00 PM	Dennis Hansen	<a href="mailto:Dennis.Hansen@Pacifcorp.com">Dennis.Hansen@Pacifcorp.com</a>
Power Quality Activities WG (lunch mtg, no room needed)	Tuesday	12:00 PM to 1:00 PM	Wilsun Xu	<a href="mailto:wxu@ece.ualberta.ca">wxu@ece.ualberta.ca</a>
TF on Voltage Sag Indices (1564)	Tuesday	1:00 PM to 2:00 PM	Dan Sabin	<a href="mailto:d.sabin@ieee.org">d.sabin@ieee.org</a>
TF on Flicker (1453)	Tuesday	2:00 PM to 3:00 PM	Reuben Burch	<a href="mailto:rfburch@southernco.com">rfburch@southernco.com</a>
Power Quality Solutions WG (1409 and 1346)	Tuesday	3:00 PM to 5:00 PM	Dave Mueller	<a href="mailto:dave@electrotek.com">dave@electrotek.com</a>
Intelligent Grid Holding Spot (scheduled by others)	Wednesday	8:00 AM to 10:00 AM	Erich Gunther	<a href="mailto:erich@enernex.com">erich@enernex.com</a>
Harmonics WG	Wednesday	10:00 AM to 12:00 PM	Bill Moncrief	<a href="mailto:bmoncrief@ieee.org">bmoncrief@ieee.org</a>
Harmonic Control on Power System TF (519)	Wednesday	1:00 PM to 2:00 PM	Mark Halpin	<a href="mailto:halpism@auburn.edu">halpism@auburn.edu</a>
PQ Interest Group	Wednesday	2:00 PM to 3:00 PM	Bill Moncrief	<a href="mailto:bmoncrief@ieee.org">bmoncrief@ieee.org</a>
Power Quality Subcommittee Meeting	Wednesday	3:00 PM to 4:00 PM	Tom Gentile	<a href="mailto:thomas.gentile@us.ngrid.com">thomas.gentile@us.ngrid.com</a>
SCC22 Power Quality Standards Coordination Committee	Wednesday	4:00 PM to 5:00 PM	Bill Moncrief	<a href="mailto:bmoncrief@ieee.org">bmoncrief@ieee.org</a>

# Color Book Re-Engineering Project

Carey J. Cook  
S&C Electric Company  
Chicago, IL

# Organizational Structure

- Technical Books Coordinating Committee
  - Coordinates new WGs formed along technical content lines (8 in total)
    - General Material (Base Book) WG
    - Power System Design WG
    - Power Systems Analysis WG
    - Power Systems Grounding WG
    - Protection and Coordination WG
    - Emergency/Stand-By Power Systems WG
    - Power Systems Reliability WG
    - Maintenance, Operations, and Safety WG



# Organizational Structure

- Order of the following material is important
  - Numbering system for the “dot” standards
- Status
  - New structure has been accepted
  - PARS to be submitted shortly
  - Revision work to begin immediately
- Deadline
  - Revise material and conduct ballots: 2008-2009
  - Complete project: 2010

# General Material (Base Book) Editorial WG

- **Chair: Dave Mills**
- **E-Mail Address: (d.mills@ieee.org)**
- **# of Topical Areas (dot standards): 1**
  - Will include all materials of a general nature
  - Will serve as introduction to the more detailed information found in the individual dot standards

# Power Systems Design Editorial WG

- Chair: **Peter Southerland**
- E-Mail Address: (**peter.sutherland@ge.com**)
- Covers Content Previously in the:
  - **Red Book**
  - **Gray Book**
  - **Bronze Book**
  - **White Book**
- # of Topical Areas (dot standards): **11**

# Power Systems Design Editorial WG

- Topical Areas:
  - Planning of . . .
  - Evaluating Electrical Service Req'ts of . . .
  - Design of . . .
  - Estimating the Cost of . . .
  - Application of Power Distribution Apparatus in . . .
  - Expansion, Modernization, and Rehabilitation of . . .

# Power Systems Design Editorial WG — Continued

- Topical Areas:
  - Application of Communications and Signaling Systems Used in . . .
  - Instrumentation and Metering of . . .
  - Lighting of . . .
  - Electric Space Conditioning of . . .
  - Application of Controllers and Automation to . . .

# Power Systems Analysis Editorial WG

- Chair: **Farook Shokoooh**
- E-Mail Address: (**farrokh@etap.com**)
- Covers Content Previously in the:
  - **Violet Book**
  - **Brown Book**
- # of Topical Areas (dot standards): **11**

# Power Systems Analysis Editorial WG

- Topical Areas:
  - Conducting Load-Flow Studies of . . .
  - Conducting Short-Circuit Studies of . . .
  - Conducting Device Short-Circuit Studies of . . .
  - Arc-Flash Calculations for . . .
  - Transient Stability Studies of . . .
  - Motor-Starting Studies of . . .
  - Harmonic-Analysis Studies of . . .

# Power Systems Analysis Editorial WG — Continued

- Topical Areas:
  - Switching Transient Studies of . . .
  - Cable-Ampacity Studies of . . .
  - Analyzing Voltage Sags of . . .
  - Analyzing DC Auxiliary and Battery Systems  
in . . .



# Power Systems Grounding Editorial WG

- **Chair: Doug Dorr**
- **E-Mail Address: (d.dorr@ieee.org)**
- **Covers Content Previously in the:**
  - **Green Book**
  - **Emerald Book**
- **# of Topical Areas (dot standards): 5**

# Power Systems Grounding Editorial WG

- Topical Areas:
  - System Grounding of . . .
  - Bonding and Grounding Equipment in . . .
  - Static-Discharge Protection of . . .
  - Lightning Protection of . . .
  - Powering and Grounding Electronic Equipment in . . .

# Protection and Coordination Editorial WG

- **Chair: Rasheek Rifaat**
- **E-Mail Address:**  
**(Rasheek.Rifaat@jacobs.com)**
- **Covers Content Previously in the:**
  - **Buff Book**
  - **Blue Book**
- **# of Topical Areas (dot standards): 13**

# Protection and Coordination Editorial WG

- Topical Areas:
  - Application of Instrument Xfmrs in . . .
  - Application of Protective Relays in . . .
  - Application of LV Fuses in . . .
  - Application of HV Fuses in . . .
  - Application of LV Circuit Breakers in . . .
  - Ground-Fault Protection of . . .
  - Conductor Protection in . . .
  - Motor Protection in . . .
  - Transformer Protection in . . .

# Protection and Coordination Editorial WG — Continued

- Topical Areas:
  - Generator Protection in . . .
  - Bus and Switchgear Protection in . . .
  - Service Supply Line Protection in . . .
  - Overcurrent Coordination of . . .

# Emergency/Stand-By Power Editorial WG

- Chair: **Joe Weber**
- E-Mail Address: (**Jweber@ASCO.COM**)
- Covers Content Previously in the:
  - **Orange Book**
- # of Topical Areas (dot standards): **7**

# Emergency/Stand-By Power Editorial WG

- Topical Areas:
  - Application of Generator Systems to . . .
  - Application of Stored Energy Systems to . . .
  - Improving the Reliability of Emergency and Standby Power Systems in . . .
  - Energy Management of . . .
  - Energy Management of Motors, Electrical Equipment and Lighting in . . .
  - Application of Metering for Energy Management of . . .
  - Application of Distributed Generation to . . .

# Power Systems Reliability WG

- Chair: **Robert Arno**
- E-Mail Address: (**RArno@alionscience.com**)
- Covers Content Previously in the:
  - **Gold Book**
- # of Topical Areas (dot standards): **6**



# Power Systems Reliability WG

- Topical Areas:
  - Reliability Planning and Design of . . .
  - Evaluating the Reliability of Existing . . .
  - Determining Impact of Preventative Maintenance on the Reliability of . . .
  - Determining Impact of Emergency and Stand-By Power on the Reliability of . . .
  - Use of Probability Methods for Conducting Reliability Analysis of . . .
  - Reliability Compliance Testing of . . .

# Maintenance, Operation, and Safety Editorial WG

- Chair: **Dennis Neitzel**
- E-Mail Address:  
([dennis.neitzel@avotraining.com](mailto:dennis.neitzel@avotraining.com))
- Covers Content Previously in the:
  - **Yellow Book**
- # of Topical Areas (dot standards): **3**

# Maintenance, Operation, and Safety Editorial WG

- Topical Areas:
  - Operation and Management of Industrial and Commercial Power Systems
  - Maintenance of Industrial and Commercial Power Systems
  - Electrical Safety of Industrial and Commercial Power Systems