



## **TRANSFORMERS COMMITTEE SPRING 2012 MEETING – NASHVILLE, TN**

### **1.0 Chair's Report – B. Chiu**

#### **1.1 IEEE Power & Energy Society Technical Council**

The Technical Council of the IEEE Power Energy Society (PES) is presently composed of the Chairpersons of the PES Technical Committees, plus the Chairpersons of Standing Committees reporting to it. The Power Energy Society is Division VII of The Institute of Electrical and Electronics Engineers (IEEE). For operating functions it is responsible to the IEEE Technical Advisory Board and for technical activities to the IEEE Technical Activities Board. Please see <http://www.ieee-pes.org/technical-committees/statement-of-purpose-and-scope-of-activities-for-the-pes-technical-council> for further details on the Statement of Purpose and Scope of Activities for the PES Technical Council. The membership of the Technical Council is listed below.

#### **TECHNICAL COUNCIL OFFICERS**

Damir Novosel, *Chair*

Jeffrey H. Nelson, *Vice Chair*

S. S. (Mani) Venkata, *Secretary*

Rick Taylor, *Past Chair*

#### **STANDING COMMITTEES**

Awards Committee - John Randolph, *Chair*

Meetings & Marketing Committee - Jeffrey H. Nelson, *Chair*

Organization & Procedures Committee - Mani Venkata, *Chair*

Standards Coordination Committee - Bill Bartley, *Chair*

Technical Sessions Committee - Jeffrey H. Nelson, *Chair*

#### **COORDINATING COMMITTEES**

Emerging Technologies Coordinating Committee - Branislav Djokic, *Chair*

Intelligent Grid Coordinating Committee - Don Von Dollen, *Chair*

Marine Systems Coordinating Committee - Paul Bishop, *Chair*

Wind and Solar Power Coordinating Committee - Richard J. Piwko, *Chair*

#### **TECHNICAL COMMITTEES**

Electric Machinery Committee - Mike Sedlak, *Chair*

Energy Development and Power Generation Committee - Om Malik, *Chair*

Insulated Conductors Committee - John Smith, *Chair*

Nuclear Power Engineering Committee - S. K (Satish) Aggarwal, *Chair*

Power System Analysis, Computing, and Economics Committee - Sandoval Carneiro, Jr., *Chair*

Power System Communications Committee - Dan Nordell, *Chair*

Power System Dynamic Performance Committee - Nikos Hatzargyriou, *Chair*

Power System Instrumentation and Measurements Committee - R. Arseneau, *Chair*

Power System Operations Committee - William (Bill) Cassel *Chair*

Power System Planning and Implementation Committee - M. L. Chan, *Chair*

Power System Relaying Committee - Robert D. Pettigrew, *Chair*

Stationary Battery Committee - William (Bill) Cantor, *Chair*

Substations Committee - John D. Randolph, *Chair*

Surge Protective Devices Committee - Dr. A. J. (Tony) Surtees, *Chair*

Switchgear Committee - Ken Edwards, *Chair*

Transformers Committee - Bill Chiu, *Chair*

Transmission and Distribution Committee - S. J. Ranade *Chair*



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### 1.2 PES Technical Council Activities

The most recent Technical Council meeting took place on January 8, 2012, at the Joint Technical Committee Meeting in Garden Grove, CA. Highlights of several ongoing activities of Technical Council and its Committees are included below.

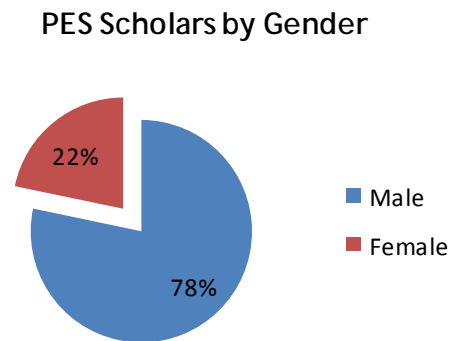
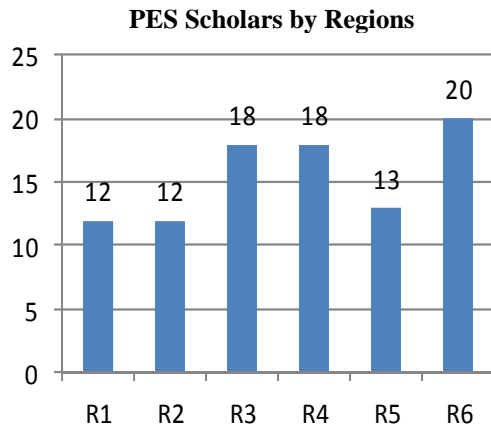
#### 1.2.1 IEEE PES Scholarship Plus Initiative

In October 2011, the IEEE PES announced the inaugural Scholarship Plus Initiative™ award recipients. Ninety-Three (93) PES Scholarship recipients have been selected from 51 U.S. universities for the 2011-12 Academic year. These scholarships are being distributed through the IEEE Power & Energy Scholarship Fund which is being used to support the IEEE PES Scholarship Plus Initiative.

The Scholarship Plus Initiative provides multi-year scholarships and career experience opportunities to qualifying U.S. electrical engineering undergraduate students. As long as the scholar continues to meet renewal standards, he or she will receive up to three years of funding — \$2,000 the first year, \$2,000 the second year and \$3,000 the third year — interspersed with up to two much-valued career experiences.

These undergraduate students were selected by industry and academic representatives based primarily upon: academic preparation; extra-curricular activities and leadership; interest in engineering in general, and power and energy engineering in particular; and overall assessment of student's potential for a successful power and energy engineering career.

Six regional committees were formed to review and select the PES Scholarship Plus Scholars in the US by the 6 IEEE defined Regions, and to consult on the program's implementation. There are approximately 100 volunteers supporting the program through the regional and other committees.



21 (22%) of 93 award recipients are female; the number of females is noteworthy as it is a significant proportion relative to the portion in Electrical Engineering programs. This proportion is estimated as roughly twice the typical enrollment of females in EE thus encouraging and supporting greater future enrollments.

Preparations for the second year of the program are underway. Discussions are being held with prospective donors regarding employment recruitment and career promotion strategies, and requesting financial support for the PES Scholarship Plus Initiative. The next scholarship application period will be from March 1 through June 30, 2012.



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More information about the PES Scholarship Plus Initiative™ is available at: [www.ee-scholarship.org](http://www.ee-scholarship.org), or contact the program administrator directly via Email: [info@ee-scholarship.org](mailto:info@ee-scholarship.org)

### 1.2.2 Conference Paper Quality

There have been some on-going dialogues at the recent Technical Council meetings regarding conference paper quality and acceptance rate, which directly translates to the number of papers accepted, and indirectly impacts the number of attendees, the available timeslots for the paper sessions, multiple simultaneous paper sessions with potential overlap from both time and subject matter perspective. There are many perspectives discussed during the most recent meeting in January, 2012 and the Technical Council agreed on the following set of tenets moving forward:

- One approach does not fit all and we should accommodate to the needs of various committees. Avoid perceived division between practitioners and academics, as we all have the same goal to help our industry that has been experiencing some real exciting developments.
- There is a need to have consistent criteria in reviewing papers, organizing panels, and avoiding overlaps. It is not appropriate to single out or focus on any committee - Our strength is in applying best practices.
- We want to have output and initiatives of all committees more attractive to as wide of an audience as possible. Our members want to participate on the panel or write a paper that is of interest to our community.

After some deliberation, a motion was made to create a taskforce to develop a set of review and acceptance criteria that can be applied across the all the technical committees. The motion passed and a Paper Acceptance Criteria Taskforce was formed, with volunteers from representatives of the following technical committees:

- Power System Relaying Committee - Robert D. Pettigrew, *Chair*
- Transformers Committee - Bill Chiu, *Chair*
- Transmission and Distribution Committee - S. J. Ranade, *Chair*

The deliverable of this Taskforce is a draft guideline for paper review and acceptance criteria for discussion at the upcoming PES GM meeting in San Diego that is schedule to take place in July, 2012. If you have comments or questions related to this activity please contact the Committee Chair.

### 1.2.3 IEEE Fellow Nominations

The recent statistics of the Fellow nominations have indicated room for improvement for PES to increase the efforts in nominating our significant contributors to the IEEE Fellow membership grade. Currently there are four categories of contributions that senior members with more than five years of service (in any grade of membership) can be nominated towards the Fellow grade. These are:

**Application Engineer/Practitioner**—Responsible for product development, advancement in system, application or operation, project management or construction activity, process development, manufacturing innovation, codes or standards development, or other application of technology.

**Educator**—Responsible to advance electrical engineering and scientific technology through education by the developing curricula and/or courses that are innovative and unique.

**Research Engineer/Scientist**—Responsible for inventions, discoveries or advances in the state of the art technological advances.

**Technical Leader**—Responsible for a managerial, team, or company-wide effort using technical innovation, and resulting in outstanding performance, economic enhancements, or other advantages to benefit society.



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The Fellow nominations statistics at the PES level for the Class of 2011 are:

- 49 total nominations received
- 23 were noted as exceptional or highly qualified
- 70% of the nominations exhibit high quality of the preparation
- The remaining 30% of the nominations has shortcomings that included:
  - Lack of sufficient description of 1 or 2 distinguished qualifications or contributions to the industry
  - Focus on overall individual's policy level contributions (compared to a balance of technical and business level contributions)
  - Insufficient citations for the contributions
  - Some of the nominations of lower quality appear to come from local PES Chapters

Overall, IEEE average a bit over 35% of the nominees being elected to the grade of Fellow. PES is slightly below the IEEE average at approximately 30% success rate.

The key focus to increase the number of PES Fellows include

- Increasing the number of nominations
- Improved quality of the submissions
- Assure proper representation and fair process for PES at the IEEE Fellows Committee
- Promote our members to become senior members and eligible for Fellows
- Committee Fellows Coordinators are key to facilitate the process
  - Review of the nominations and assist in the process
  - Help committees without experience and many Fellows
  - Sharing of best practices in some of the Technical Committees (e.g., PSRC), that could be shared with other TC's.

One thing worth noting here is that any person, including non-members, can serve as nominator, except for the following individuals (for the purpose of avoiding potential conflict of interest)

- Members of the IEEE Board of Directors
- Members of the IEEE Fellow Committee
- IEEE Technical Society/Council Fellow Evaluating Committee Chairs
- Members of IEEE Technical Society/Council Fellow Evaluating Committee reviewing the nomination, or IEEE Staff.

Our website has a listing of our members who have achieved this highest level of membership recognition. As a handy reference, I have included the list below in alphabetical order:

**Dennis J. Allan (Life Fellow)**

1992 - for contributions to the design and development of power transformers.

**Ray Bartnikas (Life Fellow)**

1977 - for contributions to the field of dielectric and corona loss mechanisms in electrical insulating systems.

**Robert C. Degeneff**

1993 - for contributions to the modeling and computation of transient voltages in transformer windings

**Ramsis S. Girgis**

1993 - for contributions to reductions in the losses of large power transformers

**Philip John Hopkinson**

2002 - for contributions to the reliability of distribution transformers and the development of related standards for testing and application

**William J. McNutt (Life Fellow)**

1976 - for contributions to the design of power transformers and standardization of test procedures



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### **Harold R. Moore (Life Fellow)**

1997 - for leadership in the development, design, and application of power transformers and associated equipment

### **Linden W. Pierce (Life Fellow)**

2000 - for contributions to the understanding of heat transfer and loading of liquid-immersed and dry type power and distribution transformers

### **Robert A. Veitch (Life Fellow)**

1998 - for leadership in the development and design of very large and extra high voltage transformers, shunt reactors and associated equipment

### **Loren B. Wagenaar**

1996 - for contributions to transformer and bushing test standards and specifications

Most recently, the Transformers Committee volunteers made three nominations for the class of 2012 candidates. We wish them the best in a successful outcome in the upcoming evaluation process.

### **1.2.4 Technical Sessions Committee & Upcoming PES Sponsored Conferences**

The Vice Chair's Report contains information on papers and panel sessions to be presented at the upcoming PES T&D Conference and Exposition (scheduled from May 7 – May 10, 2012 in Orlando, FL) and the PES General Meeting (scheduled from July 22 – July 26, 2012 in San Diego, CA).

The Chair notes with appreciation that several members and active participants in the Transformers Committee have authored papers and will be presenting at the Orlando T&D Conference and Exposition. A noteworthy paper authored by Dr. Ramsis Girgis, et.al. on the *Effects of GIC on Power Transformers and Power Systems* will be presented at the PES T&D Conference and Exposition at Orlando.

Special thanks also goes to the volunteers who devoted significant time over the year-end holiday period to assist in reviewing the submitted papers.

Please refer to the PES website <http://www.ieee-pes.org/meetings-and-conferences/calendar> for additional meetings and conferences sponsored by the PES.

## **1.3 Transformers Committee Activities**

### **1.3.1 Subcommittee Chair Appointment for the calendar year 2012**

Consistent with the Transformers Committee's O&P manual, the following Subcommittee Chairs were reappointed/appointed for the calendar year 2011.

- Meetings Planning Subcommittee
- Standards Subcommittee
- Bushings Subcommittee
- Dielectric Test Subcommittee
- Distribution Transformers Subcommittee
- Dry-Type Transformers Subcommittee
- HVDC Converter Transformers and Smoothing Reactors Subcommittee
- Instrument Transformers
- Insulating Fluids Subcommittee
- Insulation Life Subcommittee
- Performance Characteristics Subcommittee
- Power Transformers Subcommittee

**Gregory Anderson**  
**William Bartley**  
**Peter Zhao**  
**Loren Wagenaar**  
**Stephen Shull**  
**Charles Johnson**  
**Michael Sharp**  
**Ross McTaggart**  
**Susan McNelly**  
**Bruce Forsyth**  
**Ed teNyenhuys**  
**Tom Lundquist**



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- Underground Transformers & Network Protectors Subcommittee

Carl Niemann

### 1.3.2 Technical Editor

With Ed teNyenhuus taking on his new role as our Chair of the Performance Characteristic Subcommittee, this change created a vacancy for the role of Technical Editor. On behalf of the Committee, the Chair would like to acknowledge the contributions by Ed teNyenhuus during his tenure as our Technical Editor. To fill this important role, the Chair is pleased to announce the appointment of Mr. **Sanjib Som** as our new technical Editor beginning in March, 2012. Please welcome Sanjib to his new assignment and wishing him success in this new role.

PES Technical Council was notified of the Subcommittee Chairs and Technical Editor appointments for the calendar year 2012 in accordance with the guideline set forth in our O&P Manual.

### 1.3.3 Association Management (AM) System

All Committee members and active participants, and all individuals interested in Transformers Committee activities, are reminded that all communications on Committee meetings and activities are handled through the Committee website (<http://www.transformerscommittee.org/>) and through electronic media. Contact information is self-administered through our Association Management (AM) system, and administration of membership and meeting attendance records is facilitated by the AM System. All Subcommittee and Working Group Chairs are requested to use the AM system for assigning membership within their groups and for communication with their group members. All Committee members, active participants, and interested individuals are reminded also that you are responsible personally for maintaining the accuracy of your contact information, through the AM system, for Committee activities and communication. Updating your contact information in handwriting on a meeting roster does not result in updating your Committee contact information. Keeping your contact information maintained in the AM system assures that the Chair of any Subcommittee or Working Group you are involved with will be able to communicate with you. Details on enrolling and maintaining your contact information in the AM system can be found on the Committee website.

The AM system also allows you to check the Committee record of your membership status in individual Working Groups, Subcommittees, and the Main Committee. This can be done by checking your Personal Profile, and then clicking on Subgroup Details. If the Committee record does not match your record, please review with the appropriate WG or SC Chair.

### 1.3.4 Committee Membership

All are welcome to participate in the work of the Transformers Committee. Membership in the Committee provides recognition of your peers and indication to your co-workers and management of your active role in Committee work. If you are presently not a Main Committee Member, and you have been actively participating in our work for at least two full year – and can secure the acknowledgement and sponsorship of at least 3 Activity Chairs (WG's, but must include at least one Subcommittee Chair) affirming that participation, the Committee will look forward to welcoming you as a member. Membership requirements and application forms can be found in the Organization and Procedures Manual posted on the Committee website.

### 1.3.5 Acknowledgments

I extend my thanks, and the appreciation of all Committee members and participants, to Ed Smith, for his excellent leadership of the Committee over the past two years, and to Dan Platts, for having successfully completed his term as Secretary. Welcome to Don to his new position as Vice Chair, and welcome also to Steve Antosz as he takes on the new role as our Committee Secretary. On behalf of the Committee officers, I wish to express our appreciation for the opportunity to serve you, and we ask for your continuing support over the next two years. We thank you for the service you perform – through your Committee work – to serve our industry, society, and the communities in which we all live.



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Respectfully submitted,

***Bill Chiu***

Chair, IEEE/PES Transformers Committee