

**IEEE / PES**  
**ELECTRIC MACHINERY COMMITTEE MEETING**  
PES General Meeting in San Diego, CA. - July 2012

**Date:** Wednesday 25, July 2012  
**Time:** 2-5 PM  
**Location:** Manchester Grand Hyatt – Room “Oxford”

Meeting Agenda

1. Introduction of Attendees
2. Committee Approvals
  - a. 2011 Minutes
  - b. 2012 Agenda
3. Chairman’s Report – Mike Sedlak
4. Vice Chairman’s Report –Kevin Mayor
5. Standards Coordinator –Innocent Kamwa
6. Sub-committees Reports
  - a. Generators – Kay Chen
  - b. Motors – Nick Stranges
  - c. Materials – Stefano Bomben
  - d. Renewable energy machines and systems – M. El-Sharkawi
7. Other
  - a. Long Range Planning – Kevin Mayor
8. Liaisons
  - a. IAS – D. Saban
  - b. Power System Relaying – N. Nilsson
  - c. ISO – M. El-Hawary
  - d. IEMDC Steering Committee – O. Mohammed
9. Working groups
  - a. WG1 Awards-Recognitions – Nils Nilsson
  - b. Award proposal
  - c. Fellows Coordinator – Nils Nilsson
10. Other business
  - a. Presentation; “Standards Development Lifecycle”, M. Zama  
Policy updates / Standards Development overview, NESCOM (new standards) ,  
REVCOM (revisions)  
[Scheduled 4-5pm]
11. Attendee’s Roundtable

## 1. Introduction of Attendees

The meeting began with a general introduction of all attending the meeting. A total of 40 people attended this year's meeting, and are listed in Attachment B.

## 2. Committee Approvals

### a) 2011 minutes

Geoff Klempner moved to approve 2011 meeting minutes. Lon Montgomery seconded, and passed by unanimous decision.

### b) 2012 Agenda

Juri Jatskevich proposed addition of "Proposal on awards for papers from Transactions on Energy Conversion."

Mohamed El-Sharkawi moved to include as agenda item 9b: 'Award Proposal'. William Bloethe seconded, Motion passed unanimously.

## 3. Chairman's report – Mike Sedlak

Detailed report is included as an Attachment C.

Key highlights:

13% Increase in EMC papers; 54 papers submitted, 3 Rejected; 9 Panel & 2 paper sessions & 2 papers in poster sessions = 51 papers

The review process went well. Reduced reviewer list.

Good feedback on panel attendance so far. Many papers related to renewables and well attended.

There were 3 awards from EMC this year.

Scheduling at the GM is challenging - meetings spilling into Sunday and presentations on Thursday. This was discussed in the Long Range Planning meeting – suggestion was made to do more with "virtual" meetings prior to the GM.

Need to reformat the 'Policies and Procedures for Standards Development' manual (P&P Document) - Innocent Kamwa was already preparing this.

The Organization and procedures Manual (O&P) also needs to be updated to include the new sub-committee on Renewable Machines and Systems. Innocent Kamwa had already prepared this but needed to submit it.

The Tech-Council Meeting was still ongoing at the time of the EMC meeting. The TC normally meets on Tuesday and Wednesday afternoon.

Everybody had scheduled conflicts. 12-5 p.m. on Wednesday always conflicts with EMC meeting on Wednesday afternoon. Therefore Mike Sedlak proposed to move the EMC meeting to the Wednesday morning.

## 4. Vice chairman's report: Kevin Mayor

Key highlights:

The Tech Council has made it easier to have conference papers (4 pages) become Transaction papers later (8 pages). This allows for 50% new content in the Journal paper. Also, for Panel sessions, no need for presenter to submit papers. The panel organizer now has the responsibility of ensuring the quality of the presentation.

The Chair will send out the new procedures to the Vice-Chair and subcommittees.

The Long-range Meeting will implement intermediate meetings starting with a virtual meeting for "long-range planning" around the end of the year. We also recommend subcommittees/working groups have similar meetings prior to the GM, and have only face-to-face meetings to wrap up on few key items in the GM.

We will also plan on issuing abbreviated minutes soon after the main meeting to capture key points and actions instead of just before next GM. This will include at least the key decisions and action items and owners of actions.

## 5. Standards Coordinator Report

Innocent Kamwa shared the spreadsheet of standards and status, attached to these minutes as Attachment D. No issue for 2012 and 2013.

New rules are being rolled out - new standards from last year have 10 years before any action is required.

2 PARs are active, approaching deadline end of this year. IEEE 117 needs to be extended. IEEE 1310 is reaffirmed.

Bill Bloethe warned the committee to watch out for all standards coming up for action at the same time, e.g. in 2018. Recommendation is to start some earlier than needed and stagger the workload.

John Ready requested that the Standards Coordinator include the working group and subcommittee that owns the different standards in the spreadsheet and send it to Kiruba Haran for distribution.

## 6. Subcommittee Reports

### a) Generator Subcommittee – (K. Chen)

The full Generator Subcommittee meeting report is given in Attachment E. A brief synopsis was presented at the EMC meeting.

- The GSC meeting was held on 26 July 2012, and had 28 attendees.
- The former Vice-Chair (Mohammed Sharkawi) now runs his own sub committee, so a new vice-chair was elected - John Yagielski, and a new secretary was appointed - Bill Bloethe.

#### Working group progress:

- **WG4: Grid Induced Torsional Vibration:**  
The working group held a panel session to conclude all activities. Geoff Klempner pointed out the need to document the output of the study since it is still a relevant topic - Fatigue issue of shaft. Manoj Shah suggested engaging our colleagues in ASME or other mechanical oriented groups, to have an intersociety group to study this. Action: Tom should suggest a plan to do this prior to closing the WG. Kay will talk to Tom.
- **WG6: Guide for Superconducting Machines**  
The working group met to discuss the operating guide on superconducting machines. It was determined that it is premature to have a guide given the very limited experience with these machines. The working group will publish papers based on the material gathered so far.
- **WG8: Comparison of IEEE C50.13 and IEC machine standards:**  
The standard will be out for ballot end of the year. Expect release early next year. Geoff Klempner suggested EMC register with NERC to provide comments. Also affects sub-committees on motors and renewable generators. We should come up with a position to share with NERC/FERC. Propose adopting notes from panel discussion as feedback to stakeholders in NERC. Mike Sedlak will check what IEEE policies apply on such communication.
- **WG9: Wind Energy Machines and Systems:**  
This working group has been transferred to the Subcommittee on “Renewable energy machines and systems”.
- **WG10: Generator On-Line Monitoring:**  
Applied for PAR 1129 to work on standard.

### b) Motors Subcommittee – N. Stranges

The full Motor Subcommittee meeting report is given in Attachment F. A brief synopsis was presented at the EMC meeting.

The subcommittee has two active working groups working on standards:

- 1112 – Test Procedure for Poly-phase Induction Motors
- P1812 – trial guide for PM motors
- 1415 – Guide for Induction Machinery Maintenance

The subcommittee organized three panel sessions at the GM. Two of these were combined into one because of last minute cancellations.

#### **c) Materials Subcommittee - S. Bomben**

There was no report from the Materials SC given at the EMC meeting. No one from the subcommittee was available to give an update. Minutes available from June meeting, Attachment G.

#### **d) Renewable energy machines and systems – M. El-Sharkawi**

El-Sharkawi, current chair of the subcommittee gave the update.

Nick Miller has been elected as the in-coming chair.

A new award is now available for contributions to the space of renewable energy: Ned Mohan was the winner in 2012. It was noted that very few nominations were made this year. This subcommittee will work proactively to nominate members active in our committee that are deserving of this award.

The subcommittee organized three panel sessions at the GM. Two organized by Bob Nelson had 128 and 53 attendees. The third, organized by Ed Muljadi on hydrokinetics had conflicts resulting in 4 out of 6 speakers dropping out, and leading to poor attendance. Four to five panels have been proposed for 2013, including:

- Marine hydrokinetics
- Condition monitoring of wind turbines  
Unbalanced faults for wind power plants
- Advanced controls  
Ancillary services for wind power plants

Two new working groups were formed:

- Ancillary Services and
- Standards coordination

A new study group was proposed:

- Fault analysis of wind turbines  
(frequency domain model for protection setting analysis)

- The subcommittee would also like to propose tutorials – one on marine hydrokinetics and another on integration of renewable energy (with a machine focus)

## **7. Long Range Planning – Kevin Mayor**

- The Long Range Planning meeting was held on the Sunday afternoon 22 July 2012. There were 7 attendees. Normally the SC chairs are expected to attend. The following topics and actions were agreed:
- **.Meeting scheduling:**
  - Long Range Planning meeting to be Net/Live meeting in 2013. Consider first meeting soon after the first scheduling of the 2012 PES programme. And one just before the PES meeting.[K. Haran].
  - Ask at the Technical Council meeting how the IEEE can encourage use of virtual meetings & still receive some revenue.[M. Sedlak]
- **EMC membership:**
  - Prepare a first draft of an EMC information presentation [M. Sedlak]

The minutes from the Long Range Planning meeting are given in Attachment H.

## **8. Liaisons**

### **a) IAS (Industry Applications Society)**

No representative

**b) Power System Relaying – N. Nilsson**

Nils Nilsson sent a report. Included as Attachment I

**c) ISO / IEC Liaison – M. El-Hawary**

No report was presented regarding ISO liaison.

**d) IEMDC – O. Mohammed**

IEMDC 2013 will be in Chicago, May 12-15th. PELS is the main sponsor, IAS will sponsor in 2015, and PES will sponsor in 2017.

## 9. Working Groups

**a) Awards - Recognitions – N. Nilsson**

EMC had 3 Society Awards and one IEEE Award this year:

- Shah: IEEE Nikola Tesla Award

- Rik Nilsson

- [The Technical Committee Prize Paper Award](#) (the same paper also won the society best paper award): [Nabeel A. O. Demerdash, Ahmed Sayed-Ahmed and Behrooz Mirafzal for the paper entitled, "Fault-Tolerant Technique for Delta-Connected AC-Motor Drives," which appeared in the Transactions on Energy Conversion, Vol. 26, No. 2.](#)

[Mohamed El-Sharkawi was recognized for the EMC Distinguished Service Award](#) for starting wind sub-committee

Haran Karmaker was elected a Fellow of the IEEE.

**b) Fellows Coordinator – D. Sharma**

The Fellows Coordinator's report will be included in the minutes as Attachment J.

## 10. Other business

**a) Transaction Papers**

Juri Jatskevich from the IEEE Transaction Editorial Board had a proposal to increase visibility of papers from Energy Conversion for best paper awards. Propose editors to nominate best paper. This is currently the responsibility of reviewers, but not many people do this. Editors see a broad range of papers and are in a better position to see papers that stand out in quality. The editors are willing to take on this responsibility. It was decided that the committee needs to formalize the process of selection of best paper, and will form a Task Force on 'Prize Paper Selection Process'.

Achiba from the motors subcommittee mentioned that they will form a committee to implement presentation of transactions papers at conference. Needs to formalize process of selection of best paper. Start task force on prize paper selection process.

**b) Presentation; "Standards Development Lifecycle", M. Zama**  
Policy updates / Standards Development overview, NESCOM (new standards) , REVCOM (revisions)

Mallia Zaman from the IEEE Standards Association gave a presentation detailing Policy Changes related to the standards life cycle. Her full presentation [will be sent to Oleg for uploading on the website](#). Key highlights:

Lisa Yacone (Administrator) and David Ringle from NESCOM, and Karen Evangelista (Administrator) from REVCOM also detailed policy changes. Their presentations [will also be uploaded onto the website](#).

## **11. Attendee's roundtable**

No further issues were brought up, so the meeting was closed by the Chairman at 17:45pm.

### **ATTACHMENTS TO THE MINUTES**

Attachment A	EMC Organization Chart
Attachment B	List of Members/Attendance Sheet
Attachment C	Chairman's Report
Attachment D	Standards Coordinator Report
Attachment E	Generator Subcommittee Report
Attachment F	Motor Subcommittee Report
Attachment G	Materials Subcommittee Report
Attachment H	Long Range Planning
Attachment I	Power Systems Relay Committee Liaison Report
Attachment J	Fellows Coordinator

**ATTACHMENT A: PES-EMC ORGANIZATIONAL CHART - 2012**

**Officers**

**Chairman**  
Mike Sedlak

**Vice Chairman**  
Kevin Mayor

**Secretary**  
Kiruba Haran

**Representatives and Coordinators**

**Fellows Coordinator**  
Dave Sharma

**STDs Coordinator**  
Innocent Kamwa

**Rep. to TCPC**  
Mike Sedlak

**Awards & Recognition**  
Nils Nilsson

**Webmaster**  
Oleg Wasynczuk

**Liaisons**

**Excitation EDPG**  
Murray Coultres

**IAS**  
Dan Saban

**PSRC**  
Nils Nilsson

**Subcommittees (Subcommittee name/ Chair – Vice Chair – Secretary)**

**Generators**  
Chen -

**Motors**  
Chiba -

**Materials**  
Bomben – Frost - Jeremic

**Renewable Energy  
Machines & Systems**  
Nick Miller -



## Attachment B : List of Members

NAME		AFFILIATION	CONTACT DETAILS	'12	'11	'10	'09	'08
Abolhassani	Mehdi	TECO Westighthouse	<a href="mailto:mehdita@yahoo.com">mehdita@yahoo.com</a>		X			
Agee	J.C.	IEEE	<a href="mailto:jagee@ieee.org">jagee@ieee.org</a>					
Al-Othman	Maryam	Kuwait University	<a href="mailto:maryamece@gmail.com">maryamece@gmail.com</a>	X				
Aliprantis	Dionysios	Iowa State University	<a href="mailto:dali@iastate.edu">dali@iastate.edu</a>	X	X		X	
Amos	John D.	Siemens	<a href="mailto:John.amos@siemens.com">John.amos@siemens.com</a>					
Asama	Junichi	Shizuoka Univrsity	<a href="mailto:tjasama@ipc.shizuoka.ac.jp">tjasama@ipc.shizuoka.ac.jp</a>				X	
Bartley	William	Hartford Strm. Blr.	<a href="mailto:William_bartley@hsb.com">William_bartley@hsb.com</a> 860 722 5483			X		X
Bloethe	William G.	Sargent & Lundy, LLC	<a href="mailto:william.g.bloethe@sargentlundy.com">william.g.bloethe@sargentlundy.com</a>	X	X	X		X
Bomben	Stefano	Ontario Power Generation	<a href="mailto:stefano.bomben@opg.com">stefano.bomben@opg.com</a>					
Brimsek	Mike	Minnesota Power	<a href="mailto:mbrimsek@mnpower.com">mbrimsek@mnpower.com</a> 218 722 5642 / 3378		X	X	X	X
Brummond	Robert	U.S. Bureau of Reclamation	<a href="mailto:rbrummond@uc.usbr.gov">rbrummond@uc.usbr.gov</a>					X
Chan	Kevin	Alstom	<a href="mailto:kevin.chan@power.alstom.com">kevin.chan@power.alstom.com</a>	X				
Chen	Kay	Siemens, Charlotte, NC	<a href="mailto:Ke.Chen@siemens.com">Ke.Chen@siemens.com</a> (+1) 704 571 6353	X	X	X	X	X
Chiba	Akira	Tokyo Institute of Technology	<a href="mailto:chiba@ee.titech.ac.jp">chiba@ee.titech.ac.jp</a>	X	X	X	X	X
Cole	John		<a href="mailto:john@jhcole.com">john@jhcole.com</a>	X				
Consoli	Alfio	University of Catania, Italy	<a href="mailto:aconsoli@diees.unict.it">aconsoli@diees.unict.it</a>			X		
Coultes	Murray	Goldfinch Power Engineers	<a href="mailto:mcoultes@sympatico.ca">mcoultes@sympatico.ca</a>					X
Dorrel	Dave	University of Technology Sydney	<a href="mailto:david.dorrel@uts.edu.au">david.dorrel@uts.edu.au</a>	X				
Duan	Yao	Vestas	<a href="mailto:yao.duan@ieee.org">yao.duan@ieee.org</a>	X				
Edmonds	J		<a href="mailto:jedmcnds@exponent.com">jedmcnds@exponent.com</a>					
El-Hawary	Mo	Dalhousie University	<a href="mailto:elhawary@del.ca">elhawary@del.ca</a>			X		
El-Serafi	Ahmed	University of Saskatchewan	<a href="mailto:Ahmed.elserafi@usask.ca">Ahmed.elserafi@usask.ca</a>				X	
El-Sharkawi	Mohamed	University of Washington	<a href="mailto:melshark@u.washington.edu">melshark@u.washington.edu</a>	X	X	X	X	X
Ernst	Timothy	Seimens Industry	<a href="mailto:timothy.ernst@siemens.com">timothy.ernst@siemens.com</a>			X		
Fenton	Bob	President, Generation Technology Consultants, Inc	<a href="mailto:FentonGTC@aol.com">FentonGTC@aol.com</a>					
Ghai	Nirmal		<a href="mailto:nghai@austin.rr.com">nghai@austin.rr.com</a>					
Groves	Randall	Grant County PUD	<a href="mailto:rgroves@gcpud.org">rgroves@gcpud.org</a> (509) 766-2528 x2699	X		X		
Guillot	Eilin	EDF	<a href="mailto:Eilin.guillot@edf.fr">Eilin.guillot@edf.fr</a>					
Haasz	Jodi	IEEE – SA	<a href="mailto:j.haasz@ieee.org">j.haasz@ieee.org</a>				X	X
Haran	Kiruba Sivasubramaniam	General Electric	<a href="mailto:sivasubr@research.ge.com">sivasubr@research.ge.com</a>	X	X		X	X
Harley	Ron	Georgia Tech, Atlanta	<a href="mailto:rharley@ee.gatech.edu">rharley@ee.gatech.edu</a> <a href="mailto:rharley@ieee.org">rharley@ieee.org</a>	X	X	X	X	
Hattori	Kenichi	Hitachi Ltd.	<a href="mailto:kenichi.hattori.jm@hitachi.com">kenichi.hattori.jm@hitachi.com</a> +81 294 85 6509	X	X	X		
Haynes	Gabriel	Southern Company	<a href="mailto:Ghaynes@southernco.com">Ghaynes@southernco.com</a> 205 992 5546	X		X		
Hiramatsu	Daisuke	Toshiba	<a href="mailto:daisuke.hiramatsu@toshiba.co.jp">daisuke.hiramatsu@toshiba.co.jp</a>	X	X		X	X
Hurley	Joseph	Siemens Energy	<a href="mailto:Joseph.hurley@siemens.com">Joseph.hurley@siemens.com</a> 407 736 4809			X	X	
Inamura	Shingo	Hitachi Power Systems, America	<a href="mailto:shingo.inamura@hal.hitachi.com">shingo.inamura@hal.hitachi.com</a>		X			
Ionel	Dan M.	Vestas Americas	<a href="mailto:daion@vestas.com">daion@vestas.com</a>	X	X	X		
Jatskevich	Juri	University of British Columbia	<a href="mailto:jurij@ece.ubc.ca">jurij@ece.ubc.ca</a>	X	X	X	X	X
Jeremic	Aleksandra	IEEE	<a href="mailto:aleksandra@ieee.org">aleksandra@ieee.org</a>					
Kalsi	Swarn	Kalsi Green Power Systems	<a href="mailto:swarnkalsi@yahoo.com">swarnkalsi@yahoo.com</a>					
Kamwa	Innocent	Hydro-Quebec/IREQ	<a href="mailto:kamwa@ireq.ca">kamwa@ireq.ca</a>	X	X	X		X
Karmaker	Haran	TECO Westighthouse	<a href="mailto:h.karmaker@ieee.org">h.karmaker@ieee.org</a>		X	X	X	X
Kerszenbaum	Izzy	Southern California Edison	<a href="mailto:kerszei@songs.sce.com">kerszei@songs.sce.com</a> 949 368 6217			X	X	
Khosravi	Amir	BC Hycro	<a href="mailto:Amir.khosravi@bchydro.com">Amir.khosravi@bchydro.com</a>			X	X	
Klempner	Geoff	AMEC NSS	<a href="mailto:geoff.klempner@amec.com">geoff.klempner@amec.com</a> 416 217 2120	X	X	X	X	X
Krizan	Jacob	Purdue	<a href="mailto:jacob.krizan@gmail.com">jacob.krizan@gmail.com</a>	X				
Kuznetsov	Stephen	Power Superconductor Corp.	<a href="mailto:psacorp@cs.com">psacorp@cs.com</a>					X
Li	Yanni	Iowa State University	<a href="mailto:yannil@iastate.edu">yannil@iastate.edu</a>			X		
Lunney	Devin	Hitachi	<a href="mailto:dLunney@hitachi.sk.ca">dLunney@hitachi.sk.ca</a>		X			
Malik	Om	University of Calgary	<a href="mailto:maliko@ieee.org">maliko@ieee.org</a>					
Masrur	M. Abul	US Army RDECOM-TARDEC	<a href="mailto:md.abul.masrur@us.army.mil">md.abul.masrur@us.army.mil</a>		X	X	X	
May	Michael	ATC	<a href="mailto:michaelmay@ieee.org">michaelmay@ieee.org</a>	X				
Mayor	Kevin	Alstom (Switzerland)	<a href="mailto:Kevin.mayor@power.alstom.com">Kevin.mayor@power.alstom.com</a> 0041 56 466 6366	X	X	X	X	X



McCown	William	Siemens Energy	william.mccown@siemens.com 407 736 4789	X	X	X	X	X
McKinnon	David		<a href="mailto:mckinnon@pdma.com">mckinnon@pdma.com</a>					
Merkhouf	Arezki	IREQ Hydro Quebec	<a href="mailto:merkhof.arezki@ireq.ca">merkhof.arezki@ireq.ca</a>				X	X
Mi	Chris	U. of Mchigan	<a href="mailto:chrismi@umich.edu">chrismi@umich.edu</a>	X				X
Michalec	Jim	WEG Electric	<a href="mailto:jrmichalec@weg.net">jrmichalec@weg.net</a>	X	X			X
Milano	Bert		<a href="mailto:brmilano@do.usbr.gov">brmilano@do.usbr.gov</a>					
Mohammed	Osama A.	Florida International University	<a href="mailto:mohammed@fiu.edu">mohammed@fiu.edu</a>	X	X	X	X	X
Montgomery	Lon	Siemens Energy	lon.montgomery@siemens.com 407 736 4784	X		X	X	X
Mottershead	Glenn	HDR/DTA	glenn.mottershead@hdrinc.com gmtrshd@ieee.org 647 294 5586			X	X	X
Nakahara	Akihito	Hitachi	<a href="mailto:akihito.nakahara.wj@hitachi.com">akihito.nakahara.wj@hitachi.com</a>					X
Nilsson	N.E.	First Energy Corp (Retired)	nilssonn@sbcglobal.net 330 482 9781		X	X		X
Nippes	Paul	Nippes-Bell	<a href="mailto:support@gaussbusters.com">support@gaussbusters.com</a>					
Oshima	Masahide	Tokyo University of Science	<a href="mailto:moshima@rs.suwa.tus.ac.jp">moshima@rs.suwa.tus.ac.jp</a>	X	X	X	X	X
Owen	Edward L.	GE Energy (retired)	<a href="mailto:eowen@nycap.rr.com">eowen@nycap.rr.com</a>					
Pekarek	Steve	Purdue University	<a href="mailto:spekarek@purdue.edu">spekarek@purdue.edu</a>		X			
Pillay	Prag	Concordia University	<a href="mailto:pillay@eucs.concordia.ca">pillay@eucs.concordia.ca</a>			X	X	
Rahman	M.A.	Memorial University of Newfoundland	<a href="mailto:arahman@mun.ca">arahman@mun.ca</a>		X	X	X	X
Ready	John	Bechtel	jready@bechtel.com 301 228 8660	X		X	X	X
Roach	John	Hartford Stm. Blr.	john_roach@hsb.com	X	X	X		
Rioual	Michel	EDF	<a href="mailto:Michel.rioual@edf.fr">Michel.rioual@edf.fr</a>				X	
Rubbo	Michael	Baldor Electric	<a href="mailto:mjrubbo@baldor.com">mjrubbo@baldor.com</a>					X
Saban	Dan	GE Energy	<a href="mailto:saban@ieee.org">saban@ieee.org</a>			X		
Schaeffer	Chris	Duke	<a href="mailto:chris.schaeffer@duke-energy.com">chris.schaeffer@duke-energy.com</a>	X				
Sedlak	Mike	Edison Mission Generation	msedlak@mwgen.com 815 207 5872	X	X	X	X	X
Seely	Doug	Stantec Consulting	doug.seely@stantec.com 407 736 4809			X		
Shah	Manoj	GE Global Research	<a href="mailto:shahmr@ge.com">shahmr@ge.com</a>	X		X		
Sharma	Dave	FERC	<a href="mailto:dharmendra.sharma@ferc.gov">dharmendra.sharma@ferc.gov</a>					
Sizov	Gennadi	Marquette University	<a href="mailto:gennadi.sizov@mu.edu">gennadi.sizov@mu.edu</a>		X			
Spotts	Philip	Worley Parsons	<a href="mailto:philip.spotts@worleyparsons.com">philip.spotts@worleyparsons.com</a>			X		
Stein	Jan	EPRI	<a href="mailto:jstein@epri.com">jstein@epri.com</a>					
Stranges	Nick	GE Energy	<a href="mailto:nick.stranges@ge.com">nick.stranges@ge.com</a>	X	X	X	X	X
Sudhoff	Scott	Purdue	<a href="mailto:sudhoff@purdue.edu">sudhoff@purdue.edu</a>	X	X			
Timm	Wayne	Sask Power	w.timm@ieee.org 306 862 3148			X		
Toliyat	Hamid		<a href="mailto:toliyat@ece.tamu.edu">toliyat@ece.tamu.edu</a>					
Uddin	M. Nasir							
Umans	Steve	Consultant	umans@alum.mit.edu		X			
Wait	Thomas	Consultant	<a href="mailto:trw104@sbcglobal.net">trw104@sbcglobal.net</a>					X
Wamkeu	Rene	University of Quebec	<a href="mailto:rene.wamkeu@uqat.ca">rene.wamkeu@uqat.ca</a> 819 7620971 / 2240			X	X	
Wasynczuk	Oleg	Purdue University	wasynczu@ecn.purdue.edu 765494 3475	X	X	X	X	X
Weeber	Konrad	GE	<a href="mailto:weeber@research.ge.com">weeber@research.ge.com</a>	X	X			
Wilson	Chuck	Insulation Integrity Inc.	chuck@insxint.com 512 694 1827			X		
Yacone	Lisa	IEEE-SA	<a href="mailto:l.yacone@ieee.org">l.yacone@ieee.org</a>	X				
Yagielski	John	GE	<a href="mailto:john.yagielski@ge.com">john.yagielski@ge.com</a>	X	X			
Number of attendees				40	37	44	33	34

E-mail delivery failure  
New entries in roster 2012

