

IEEE / PES
ELECTRIC MACHINERY COMMITTEE MEETING
PES General Meeting in Vancouver, Canada - July 2013

Date: Wednesday July 24, 2013
Time: 2:00 – 5:00 PM
Location: VCC West – West Meeting Room 112

Meeting Agenda

1. Introduction of Attendees
2. Committee Approvals
 - a. 2012 Minutes
 - b. 2013 Agenda
3. Election of new officers
4. Chairman's Report – Mike Sedlak
5. Vice Chairman's Report –Kevin Mayor
6. Standards Coordinator –Innocent Kamwa
7. Sub-committees Reports
 - a. Generators – Kay Chen
 - b. Motors – Akira Chiba
 - c. Materials – Stefano Bomben
 - d. Renewable energy machines and systems – Nick Miller
8. Other
 - a. Long Range Planning – Mike Sedlak
 - b. Planned sessions and panels for 2014 PES-GM
9. Liaisons
 - a. IAS – D. Saban
 - b. Power System Relaying – N. Nilsson
 - c. ISO – M. El-Hawary
 - d. IEMDC Steering Committee – O. Mohammed
10. Working groups
 - a. WG1 Awards-Recognitions – Nils Nilsson
 - b. Award proposal
 - c. Fellows Coordinator – Nils Nilsson
11. Other business
 - a. EMC Manuals:
 - Organization & Procedures Manual
 - Policies and Procedures for Standards Development
 - Working Group Procedures Manual
 - b. New Webmaster
12. Attendee's Roundtable

1. Introduction of Attendees

The meeting began with a general introduction of all attending the meeting. A total of 36 people attended this year's meeting, and are listed in Attachment B.

2. Committee Approvals

a) 2012 minutes

John Yagielski moved to approve the 2012 meeting minutes. Ronald Harvey seconded the motion, and it was passed by unanimous agreement.

(Note: Dan Lionel reported that he had not received the e-mail regarding the minutes.

=> **Kevin mayor to check and update the EMC distribution list.**

b) 2013 Agenda

Osama Mohammed moved to approve the agenda. Jim Michalek seconded the motion and it was passed by unanimous agreement.

3. Election of Officers

Chair elect: Kevin mayor
Vice-Chair elect: Kiruba Haran
Secretary: Open => Kay Chen

Mike opened the nomination for secretary and informed that Kay Chen had expressed her interest in taking this post. There were no other candidates. Osama Mohammed proposed to close the nomination and accept the officers as listed above. The motion was seconded by Gayland Bloethe and it was passed by unanimous agreement. The new EMC officers were duly elected, starting in January 2014.

4. Chairman's report – Mike Sedlak

Mike thanked the sub-committees for their good work over the past years considering the continuing economic and business circumstances.

He informed on the status of the EMC manuals. The details are recorded below under item 11(a).

He also informed of the EMC members recently appointed as Fellows, and thanked them for their past and present effort and dedication to the work of the EMC. They are listed in section 10(a) under Awards.

Several points were raised regarding the long term perspective. These points and the resulting discussion are recorded in section 8(a) under Long Term Planning.

5. Vice chairman's report: Kevin Mayor

Mike had continued to carry out the tasks of the EMC Planning Coordinator (TCPC), in addition to his responsibilities as Chair in attending the Technical council meetings. Kevin thanked Mike for his considerable support in this respect over the last two years.

These duties will be re-organised in the following years.

The following comments from Kiruba Haran (Secretary – not present at the GM) were also reported:

“The EMC officers tried online meetings of the Long Range committee as discussed in the last GM. These went well. They were easy to schedule, and though hard to compare with in person meetings they were effective and we accomplished what we sought to do. I recommend more such meetings between GM's.

It would be helpful to document different roles and responsibilities of the committee to serve as a tutorial as new officers come on board. The P&P manual has the basic info, but there are many other specific things the officers (especially the Chair and tech council rep) engage in that are not well documented.”

The points are already being addressed following discussions between the current Chair and Vice-Chair on 26 July, 2013.

Kevin also reported that the first draft of the minutes will be uploaded on the EMC website soon after the main meeting in order to capture the key points and actions instead of just before next GM. This will include at least the key decisions, and action items/owners.

6. Standards Coordinator Report (Innocent Kamwa)

Innocent reported that the P&P Manual had been finally approved in June [see 11(a)]. The requirements contained in this manual need to be taken seriously by the WG members. ***Its use will be audited in future, and WGs selected at random to check if they are working in line with the P&P.***

As informed last year, the lifespan of standards is now 10 years, However sub-committees should review them in advance of the expiry date, and plan updates in good time in order to be able to work with less stress as the deadlines become due.

There is now an official template for standards available. A link will be provided in Innocent's report.

In future the IEEE will authorize a 30 day public review in addition to the 45 ballot. This means that anybody can purchase an advance copy of the standard and then have the right to comment or raise questions. These queries will need to be addressed as part of the approval process. This process was approved in principle during the IEEE meeting in Brussels in June, although the details of the process have yet to be clarified.

Regarding the published CD of current EMC standards (now out-of-date), Geoff Klempner repeated his request that withdrawn standards also be included, since these are still used and relevant to existing plant. Geoff had sent a list of these standards last year. Mallia stated that the updated CD will be worked on by Standard Committee in the coming year taking Geoff's request into account.

7. Subcommittee Reports

a) Generator Subcommittee – (Kay Chen)

The Generator Subcommittee report can be found in Attachment D, A brief synopsis was presented at the EMC meeting by John Yagielski in Kay's absence.

- There are currently 2 active PARS associated with WG8 and WG10...
- WG8 working on Standard C50.13 had submitted the revision for balloting and were currently engaged in completing the ballot response. It is targeted to submit the standard for approval by the October deadline.
- Good progress has been made by WG10 on the re-written Standard 1129. It is planned to send the document for a first ballot before the end of the year.
- WG 6 had concluded that it was too early to create an application guide for superconducting machines. A status paper would be compiled and the WG will be then suspended until further notice.

b) Motors Subcommittee – Akira Chiba

The Motor Subcommittee report is given in Attachment E. A brief synopsis was presented at the EMC meeting by Akira.

- The Technology Society had asked if the MoSC would be maintaining Standard IEEE 11 "Standard for Rotating Machinery for Rail and Road Vehicles". If not, then they requested to take it over.
It was agreed within the SC that the standard would be retained within the MoSC and updated, however they will ask the vehicle technology society experts to join the working group. (Edward P Priebe was the last Chair. Of the WG that updated this standard).
The MoSC will apply for a PAR.
- Two Panel sessions were held this year with 20 & 30 attendees.

- The MoSC meeting was held as a Combo session and had 26 attendees. The Combo session meant that there was a presenter's breakfast and a projector available for the presentations and the following SC meeting.
- The Vice-Chair of the MoSC wants to step down due to other commitments. Prof. Oshima has volunteered to take over this position.

c) Materials Subcommittee – (S. Bomben)

There was no report from the Materials SC given at the EMC meeting. However the minutes of the meeting held in Charlotte on October 11, 2012 had been forwarded and are given in Attachment F.

d) Renewable energy machines and systems – (Nick Miller)

Mohamed El-Sharkawi gave a summary of the Renewables SC in the absence of Nick Miller. The SC report is given in Attachment G.

- New officers were elected for 2014 – details in Attachment A.
- The WG on modeling of fault currents was due to meet on 25 July. Version.11.4 had been distributed to the Protection & Distribution Committees for comment. Feedback is needed.

There were 4-5 types of wind turbines that had been considered (with/without power electronics). The report should be finished this year.

Mohamed asked how the results from the WG could be disseminated, e.g. as a tutorial. One option, proposed by Om Malik, would be to publish it as a Committee report on the specific PES website for WG reports - contact Pat Ryan for details.

- Other highlights:
 - The Ramakumar Award, given to Ed Mohan last year, was this year awarded to Vladimiro Miranda from INESC, Portugal. Nominations are required for this award for next year
 - 4 panel sessions were held this year:
 - Condition monitoring of wind turbines
 - Unbalanced faults for wind power plants (50+ people attended with many turned away; nominal room capacity 40)
 - Advanced controls (7 speakers, 65 people attended; nominal room capacity 40)
 - Marine Hydrokinetics

8. Other

a) Long Range Planning – Mike Sedlak

The Long Range Planning meeting was held on the Sunday morning 21 July 2013. There were 7 attendees. Normally the SC chairs are expected to attend. The minutes are given in Attachment H. The following topics were discussed during the EMC meeting and some actions agreed:

- **Training for new WG & Committee members:**

Mike explained that this topic was raised at the Technical Council Meeting but no actions were agreed. EMC will have to arrange something internally (see also 5 above).

=> Kevin Mayor and Mike Sedlak to compile an EMC Handbook for new officers (ref. documents, responsibilities, timeline etc.)

- **Technical Tutorials (help sheets):**

Lon Montgomery explained an idea for a kind of Wikipedia for Electric Machinery for given specific topics as a help to younger members, new starters or industry managers with limited technical background. It was reported that the EPRI Generator Users Group had carried out a similar task some years ago but aimed at plant operators. One possibility is to issue these 'nuggets of information' as an EMC Committee report and publish it in the PES website repository.

=> Lon offered to prepare a short outline of topics and a proposed format

- **Liaisons with other groups:** (e.g. EPRI or the North American Generation Group)
It was felt that the EMC should strengthen the liaisons with other related groups. This topic was discussed but no concrete actions defined.
- **Attracting new members:**
Mohamed El-Sharkawi proposed that the EMC expand its scope in order to attract new people. A healthy discussion followed, but it was difficult to find other technical areas which were not already covered by other societies.
John Ready proposed some advertisement on the EMC website explaining the work of the EMC and informing readers how they could get involved.
=> John offered to send a proposal to Mike
- **Meeting scheduling:**
The topic of meeting scheduling and meeting room size was raised again [7(d) above], and several ideas were discussed as to how to improve the situation. In the last year many working groups had made use of net-meetings to progress the work leaving less to discuss during the PES GM.
The general consensus was that internal committee and working group meetings could be streamlined to help eliminate conflicts.
Geoff Klempner asked if there were any plans for the PES to re-introduce a winter meeting in addition to summer meeting. Mike informed that this was not in discussion, but noted that we also need to consider how to handle the main EMC meeting to avoid conflict with the Technical Council meetings held during the GM.
=> Mike/Kevin & the EMC officers to consider the options and make a proposal.

Regarding room planning, **the SC Chairs should indicate the size of room needed when they request a panel session etc.** Whilst it was appreciated that this was sometimes done, a room allocation according to the request was not always possible.

Several Long Range Planning net-meetings will be held in 2013/2014 (as was done last year) to help track the EMC duties and status.

b) Planned sessions and panels for 2014 PES-GM

- The 'Call for papers' was already out for next GM. The deadline for submission is Nov'30.
- Panel sessions for 2014 also need to be requested by 30 Nov'13. The request needs to state the title of the session, the chairman, and give a synopsis of the session including the duration.
=> SC Chairs to send planned panel sessions to Mike Sedlak by e-mail
- Osama Mohammed and Juri Jatskevich made a general request to submit any suitable transaction papers due for acceptance this year for presentation at the 2014 GM. The papers can be submitted on the conference website and should carry the transaction reference, thereby bypassing a second review.
Only the abstract will appear in the GM publications.
Papers from up to 2 years ago can be presented.
In 2014 Osama will request:
 - 2 x 4 hour slots for transaction paper presentation in 2014
 - More papers are expected this year – generally 16 papers are needed for 2 slots (In the complete IEEE GM there were 16 transaction sessions this year)
- A reminder was also given to nominate prize papers when carrying out the conference paper reviews.

The SCs made the following preliminary proposals for panel sessions in 2014:

- **Motor Sub-Committee:**
4 panel sessions are planned:
- Harsh environment motor (Kiruba Haran and Yao Duan)

- Advanced Motor and Drive Technology for Electric Vehicle (Thomas Wu and Iqbal Husain)
[Note: The title has been corrected after the meeting. TW e-mail 10 Aug'13]
 - Advanced topics in electrical machines (Masahide Oshima)
 - Condition monitoring of electrical machines (Prabhakar Neti)
- A few working group presentations are also planned in the combo session for 2014.

➤ **Renewable Energy Systems Committee:**

- 4 panel sessions are planned
- Advanced controls for wind power and renewables
 - Marine hydrokinetics
 - New topologies for wind generation and storage
 - Field experience with wind generation and storage

2 tutorials were also planned:

- Integration of renewable energy
- Wind turbine technologies

➤ **Joint Working Group on fault current contributions from wind power plants**

Ronald Harvey informed that he would ask for a tutorial in 2014.

The Technical Council had informed that it would like the Technical Committees to sponsor tutorials in future. There were only 3 slots for PES sponsored tutorials this year.

9. Liaisons

a) IAS (Industry Applications Society)

No specific report was given regarding IAS liaison, however see 7(b) above regarding Standard IEEE 11. The IAS has its own EMC which attracts many people to its meetings.

b) Power System Relaying – N. Nilsson

Nils Nilsson had previously sent his report which is given in Attachment I.

c) ISO / IEC Liaison – M. El-Hawary

No report was presented regarding ISO/IEC liaison.

d) IEMDC – O. Mohammed

The venue for the next IEMDC meeting in 2015 will be announced soon. The IAS will sponsor the conference in 2015, and the PES will sponsor it in 2017.

The IEMDC Chair is currently H. Babak; O. Mohammed is the current SteCo Chair.

10. Working Groups

a) Awards - Recognitions – N. Nilsson

Mike announced the awards in Nils' absence.

Prize Paper: "Modeling of Salient-Pole Wound-Rotor Synchronous Motors for Population-Based Design," Transactions on Energy Conversion, June 2011, Vol. 26, No. 2, pp. 381-392 by Bash, M.L and Pekarek, S.D.

Distinguished Service: Stefano Bomben for distinguished service to the IEEE Power & Energy Society as manifested by leadership of the Materials Subcommittee and contributions to the IEEE.

Prize Standard: IEEE Std. 1310, Recommended Practice for Thermal Cycle Testing of

Form-Wound Stator Bars and Coils for Large Rotating Machines. The Working Group was chaired by Greg Stone, and he and the working group members will all receive certificates.

Cyril Veinott Award: This year the award was presented to Generator Committee member Clyde Maughan.

The importance of nominating EMC members for these awards was emphasized. Nominations are to be sent to Nils Nilsson

b) Fellows Coordinator – N. Nilsson

The Fellows Coordinator's report is included in the minutes as Attachment J. This year 5 members of the EMC were appointed as IEEE Fellows:

- Bill McCown
- Geoff Klempner
- Dan Ionel
- Swarn Kalsi
- Steve Pekarek

Mike congratulated all new Fellows and prize award winners.

11. Other business

a) EMC Manuals

There will be three manuals used within the EMC:

- Policies and Procedures for Standards Development (P&P Manual)
- Organization and Procedure Manual (O&P Manual)
- Working Group Policies and Procedure Manual (WG P&P)

The P&P Manual has been updated recently in line with the latest IEEE guidelines and was approved on 14 June 2013 and is valid until 31 December 2018. This describes the process by which standards are created, revised and approved.

The O&P Manual is presently being updated to reflect the current EMC organization, including the Renewables sub-committee. The advanced draft will be circulated soon, and it must be submitted to Technical Council by October this year for approval.

This manual describes the specific organization of the EMC and defines the associated roles and responsibilities of the EMC officers.

It is required that all EMC officers and working group conveners read, understand and follow the requirements laid out in the document. The document can be found

using the following link:

http://standards.ieee.org/about/sasb/audcom/pnp/PE_EM.pdf

The WG P&P Manual (15 pages) was released last week. It defines the roles and responsibilities of working group members, voting procedures etc. It will be issued in the next few weeks, and will be distributed to EMC members when available.

b) New Webmaster

Oleg Wasynczuk would like to step down as the webmaster, therefore Mike invited for nominations/volunteers for this position. At least one nomination was received. Nominations will be reviewed at the next GM.

12. Attendee's roundtable

- Ronald Harvey asked where the home is for high speed motor/generators. After some discussion it was finally agreed that these types of machines are covered by the Industrial Applications Society (IAS), which has its own Electric Machinery Committee.

- Izzy Kerszenbaum proposed a new EMC working group “Guideline on the Testing medium voltage motors connected by cables”. John Ready proposed that this topic could be included in IEEE 1415 on the next revision. Dave McKinnon is the new Chair for the present reconfirmation of IEEE 1415. A new WG would be required after completion of the current PAR.

=> John Ready will take the topic of “Testing medium voltage motors connected by cables” to the WG on IEEE 1415

- Geoff Klempner raised the topic of changing Grid Code requirements. After some discussion it was finally decided that this is beyond the scope of the EMC and needs a Joint Working Group within the IEEE.

=> Mike will address this issue as an “Identified Concern” to the PES, Technical Council.

No further issues were brought up. Therefore a motion to adjourn the meeting was proposed by Izzy Kerszenbaum and seconded by Geoff Klempner.

The meeting was duly closed by the Chairman at 17:00pm.

ATTACHMENTS TO THE MINUTES

- A EMC Organization Chart
- B Attendance Sheet*
- C Standards Coordinator Report
- D Generator Subcommittee Report
- E Motor Subcommittee Report
- F Materials Subcommittee Report
- G Renewables Subcommittee Report
- H Long Range Planning
- I Power Systems Relay Committee Liaison Report
- J Fellows Coordinator Report

Attachments A, B, I and J are given in this document. The other attachments will be uploaded on the EMC website as separate documents when available.

*The full EMC membership list will be made available on the website.

ATTACHMENT A: PES-EMC ORGANIZATIONAL CHART - 2013

Officers

Chairman
Mike Sedlak

Vice Chairman
Kevin Mayor

Secretary
Kiruba Haran

Representatives and Coordinators

Fellows Coordinator
Nils Nilsson

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
- Kay Chen
- John Yagielski
- Gayland Bloethe

Motors
- Akira Chiba
- Dan Ionel
- Masahide Oshima
- Yao Duan

Materials
- Nancy Frost
- Aleksandra Jeremic
- Paul Gaberson

**Renewable Energy
Machines & Systems**
- Nick Miller
- Istvan Erlich
- Ed Muliadi

Attachment B: EMC Main Meeting Attendance Sheet

NAME		AFFILIATION
Aliprantis	Dionysios	Iowa State University
Ammertorp	Jennifer	Huntington Ingalls Ind.
Bloethe	William G.	Sargent & Lundy, LLC
Chapariha	Mehrdad	University of British Columbia
Chiba	Akira	Tokyo Institute of Technology
Duan	Yao	FUC Technologies
El-Sharkawi	Mohamed	University of Washington
Harley	Ron	Georgia Tech, Atlanta
Hattori	Kenichi	Hitachi Ltd.
Hedlund	Karen	Tacoma Power
Ionel	Dan M.	Regal Beloit Corp.
Jatskevich	Juri	University of British Columbia
Kamwa	Innocent	Hydro-Quebec/IREQ
Karmaker	Haran	TECO Westighthouse
Kerszenbaum	Izzy	EXPONENT
Klempner	Geoff	AMEC NSS
Malik	Om	University of Calgary
McCown	William	Siemens Energy
Michalec	Jim	WEG Electric
Mohammed	Osama A.	Florida International University
Montgomery	Lon	Siemens Energy
Muljadi	Ed	NREL, USA
Oshima	Masahide	Tokyo University of Science, Suwa
Qiao	Wei	University of Nebraska-Lincoln
Ready	John	Bechtel
Relu	Ilie	Israel Electric
Roach	John	Hartford Stm. Blr.
Sanjir K	Panda	National University of Spore
Sedlak	Mike	Edison Mission Generation
Shah	Manoj	GE Global Research
Spotts	Philip	Worley Parsons
Strandt	Andrew	Marquette University
Thornton-Jones	Robert	Brush Turbogenerators
Yagielski	John	GE
Yoshida	Jun	Hitachi Ltd.
Zaman	Malia	IEEE-SA
New entries in roster 2013		

2 0 1 3 L I A I S O N R E P O R T

*To the Electric Machinery Committee
from the Power System Relay Committee*

The Power System Relay Committee (PSRC) convenes three meetings a year away from the IEEE PES Annual Meeting during January, May and September. The most recent meeting was convened in Memphis, Tennessee from January 14 to 17, 2013. The next meeting will be held in Baltimore, Maryland, from May 13 to 16, 2013, and the succeeding one will be convened in Albuquerque, New Mexico, from September 8 to 12, 2013. The main items of interest to the Electric Machinery Committee (EMC) are the activities of Subcommittee J: The Rotating Machinery Protection Subcommittee (RMPS). The PSRC Chair is Roger Hedding, the Vice-Chair is Mike McDonald and the Secretary is Pratap Mysore. The RMPS Chair is Murty Yalla and the Vice-Chair is Mike Reichard. Working Group (WG) activity is as follows:

Standards: The reaffirmation ballot for C37.102, Guide for AC Generator Protection, has been processed and the standard received approval at the December 14, 2012, RevCom meeting. This standard will not need to be revised for another ten years.

J2. The Protection Considerations for Combustion Gas Turbine Static Starting WG is chaired by Mike Reichard. This WG has completed preparing a working group report on the special protection requirements for generators employing load commutating inverter (LCI) static starting. The next step is to complete a transactions paper on this subject.

J6. The Protective Relaying for Pumped Storage Hydro Units is chaired by Joe Uchiyama. The present draft of the survey on pumped storage was reviewed. There are a wide number of different configurations for pumped storage facilities. This document will include discussion of schemes that have evolved over 35 years. Interestingly, this WG is adding sections on "Reasons for selecting relays" and "Reasons for changing relays." Chuck Mozina is going to try and contact personnel at the Seneca Pumped Storage Plant in Pennsylvania and the Yards Creek Pumped Storage Plant in New Jersey to verify some of the information.

J10. Draft 10, the revision of C37.96, Guide for AC Motor Protection, has been approved by RevCom and it is expected to be published in March of 2013.

JTF10. The scope of this WG is to investigate the modeling of out of step and loss of field conditions and coordination of generator excitation control systems with protection systems. Protection coordination also needs to consider transformers. The WG recognizes that this work must also consider compliance with NERC standards.

N. E. Nilsson
May 6, 2013

2013 FELLOWS COORDINATOR REPORT

Electric Machinery Committee

N. E. Nilsson was asked to assume the role of Fellows Coordinator for the Electric Machinery Committee at the Detroit annual meeting on July 27, 2011, and accepted. A plan was put into place to have each technical subcommittee identify at least two qualified candidates for nomination. The results of the first program came to fruition this year with the announcement in January of 2013, of the nominations made as a part of this program. There were five EMC members elevated to Fellow status that I am aware of:

Dan Ionel
Swarn Kalsi
Geoff Klempner
Bill McCown
Steve Pekarek

Considering that only about fifty percent of nominations or less are successful, that means that we met our nomination quota per subcommittee on the average. Thank you to all of the EMC members who participated in this effort to recognize the long-past-due accomplishments of these members of the EMC.

The EMC leadership is again committed to keeping up this effort as there are still many EMC members who have the qualifications for Fellow who have not been so recognized. At the time of this report, the number of known nominations for Fellow in this cycle is lagging the effort from last year. It is requested that each of the technical subcommittees follow-through in succeeding cycles with two or more nominations each.

N. E. Nilsson
May 5, 2013