**IEEE / PES ELECTRIC MACHINERY COMMITTEE MEETING**

**PES General Meeting in Boston - July 2016**

Date: Thursday, July 21, 2016

Time: 8:00 – 12:00 AM

Location: John B. Hynes Veterans Memorial Convention Center, SB Riverway

Meeting Agenda

1. Introduction of Attendees
2. Committee Approvals
   1. 2015 Minutes
   2. 2016 Agenda
3. Chairman’s Report Kiruba Haran
4. Vice Chairman’s Report Kay Chen
5. Tech Council Meeting Report Mike Sedlak
6. Standards Coordinator Innocent Kamwa
7. Reports
   1. Sub-committees
      1. Generators John Yagielski
      2. Motors Dan Ionel
      3. Materials Jim Lau
      4. Renewable energy machines and systems Istvan Erlich
   2. Liaisons
      1. IAS D. Ionel
      2. Power System Relaying N. Nilsson
      3. ISO TBC
      4. IEMDC Steering Committee O. Mohammed
   3. Working groups
      1. WG1 Awards / Recognitions \* Nils Nilsson
      2. Fellows Coordinator Nils Nilsson
   4. Other
      1. Long Range Planning Kiruba Haran
8. Other business
   1. Working Group Procedures Manual
   2. ED&PGC, Excitation Systems and Controls Subcommittee
   3. Planned sessions and panels for 2017 PES-GM
   4. Sub-committee websites
   5. AIAA collaboration, liaison
9. New Business

\* 5 minutes allocation for the winners of the prize paper awards to present a brief synopsis of their paper

# Introduction of Attendees

The meeting began with a general introduction of all attending the meeting.

A total of 30 people attended this year’s meeting, and are listed in Attachment B.

Jim Lau thanked the team for his time as the secretary for 2015-2016. Kay Chen asked for folks to volunteer to review papers. Kiruba thanked the attendees for managing to make the meeting, in spite of some unavoidable scheduling conflicts.

# Committee Approvals

## 2015 minutes

Nils Nilsson moved to accept the amended minutes; Haran Karmaker seconded the motion, and it was passed by unanimous agreement.

## 2016 Agenda

Haran Karmaker moved that the agenda is approved; Lon Montgomery seconded the motion, and it was passed by unanimous agreement.

The minutes below are written in the sequence of the original agenda.

# Chairman’s report – Kiruba Haran

Kiruba explained the progression of officers. John Yagielski will begin the role of Secretary following today’s meeting, with a big thanks to Jim Lau for superbly fulfilling the Secretary’s role for 2015-2016.

Kiruba’s report will focus on the following topics: Tech Council update, EMC Initiatives, and long range planning. He noted that this year’s long range planning meeting will have minutes published for the group’s review.

Kiruba highlighted that the Tech Council is trying to address the perception that the PES is not relevant to industry and that it is too US-centric. As a result, the council considers that the PES Committees need marketing representatives to highlight their activities. Thus each Committee will have a Marketing coordinator. By default, it will be the Committee chair. Every 6 months, the marketing coordinator is to submit a highlighted activity. It will be used at the PES level, for marketing communications.

Lon Montgomery noted that the EMC had previously agreed that the Vice-Chair role would include planning meetings and marketing. Nils Nilsson made a motion that the Vice Chair fulfill the Marketing Representative. Jim Lau recommended a substitute motion that we continue to look for a volunteer, and lacking one, the Vice Chair will be the Marketing coordinator. John Yagielski seconded the motion. The group voted unanimously to approve.

Lon asked to discuss barriers to industrial participation regarding not sharing Company Proprietary Information. See New Business.

Relative to addressing the US-centric nature of the PES, the PES recommended two specific actions. First, the committee will use the IEEE Resource Center for showcasing committee work. Second, the PES will help host Webinars, in order to provide interaction for members whom are unable to attend sessions in-person.

The O&P manual has been approved at the Council Meeting on Tuesday (25-Jul-2016). This includes the formal addition of the Renewables Subcommittee. Kiruba reminded working groups (WG) to follow the P & P manual, with the potential for IEEE audit.

Next Kiruba highlighted that meeting room requests are needed by 7-Nov-2016. He asked all to provide clear input to Kay Chen in time. Also, the IEEE audited the room use for 2016, and noted that 2 EMC working groups requested rooms, but no working group meeting was held. Nils Nilsson noted that on Sunday, there are many rooms available.

Kay Chen asked for feedback to help with scheduling for next year. After discussion, the team agreed to share the scheduling spreadsheet with the full EMC roster.

The Tech Council is considering elimination of the Transactions Paper Session.

Mohammed Osama & Yuri will organize the transactions paper session, and they requested a meeting time slot Monday or Tuesday at the 2017 General Meeting.

There was additional discussion on methods to help with scheduling conflicts. In summary, it was highlighted that Combo sessions are still possible – and the Subcommittees should consider combining Panel sessions with a WG business meeting.

Richard David recommended providing on-line information for potential attendees, as well as a webinar. Its purpose would be an update, to save time at the General Meeting.

Kiruba highlighted the possibility to move WG and Committee meetings to an alternate conference, such as IEMDC. As IEMDC is held every 2 years, this might take the form of meeting at IEMDC, and then the General Meeting on alternate years.

Kiruba moved to recommend the Motor Subcommittee meet at alternately at IEMDC and the General Meeting. Nils Nilsson seconded. Vote passed.

A Transportation Electrification Community has been formed at IEEE level. They are looking for more active involvement from the PES EMC. Kiruba is the representative for Electrical Machines.

Kiruba highlighted the multi-committee & multi-Society activities regarding electrification of transportation under the Transportation Electrification Community. This will continue in 2016-2017, hopefully to include the AIAA (aircraft engineering society).

Finally, Kiruba summarized actions from the long range planning committee of the EMC:

1. The EMC will create a Collabratec community in which to share updates.
2. The Generator Subcommittee will explore the possibility of a EPRI/IEEE Panel session.

It was highlighted that the PES is one of the only societies that does not provide transaction papers as part of their subscription. There was extensive discussion on the paper review process. Several folks highlighted a new journal Power & Energy Technical Systems Journal (PETSJ), intended more practical papers from utilities and OEM’s. Nils Nilsson noted that the initial paper submittals had limited industrial participation.

# Vice chairman’s report – Kay Chen

Kay stated that Kiruba’s extensive report covered nearly all of the relevant topics. Kiruba summarized the paper submittals, and explained the counts will be in the formal written report. Kay plans to host a meeting to review the meeting schedule submission at least 2 weeks before the 7-Nov-2016 deadline.

# Tech Council Meeting Report – Mike Sedlak

Kiruba provided an update on Mike’s behalf. It was incorporated in his Chair Report above.

# Standards Coordinator Report (Innocent Kamwa)

Innocent left the meeting prior to reaching his report in the agenda, but the team reviewed his written report.

IEEE 112. Haran Karmaker reported that it is in recirculation balloting.

The 1719 Core evaluation standard is in last steps of approval. A second extension to the PAR was not approved.

John Y noted that standards associated with the Generator Subcommittee that require action before 2019 have active WG’s.

Nancy Frost reported discussion regarding 1719 is on-going, and she needed to update the status. It is listed as due to expire in 2018. She will follow-up.

Haran Karmaker reported that the WG for 1415 has been disbanded due to inactivity for 2 years. The Motor Subcommittee agreed that the 1415 guide will become inactive in 2018.

Jim Lau reported that IEEE 522 & 62.6 are due to expire in 2019, but there are WG’s being formed to work on the two standards.

# Reports

**(a) Subcommittee Reports**

## Generator Subcommittee – John Yagielski

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

There are currently 58 members of the GSC (based on 2015 roster). Approximately 20 members attended the meeting on Monday.

John Yagielski is completing his tenure as the chair. Vice-chair Gayland Bloethe will assume the Chair position. Raul Rico will move to the Vice-chair role, and Andreas Kappel was elected to the position of secretary.

There are 4 active working groups & 1 task force. As such they are actively addressing all standards in need of activity through at least 2019. All WG’s met during this year’s General Meeting. He highlighted the Grid Task Force Panel session during the General Meeting as well. There were approximately 40 attendees. A follow-on Panel Session is planned for the 2017 General Meeting as well. Additionally, the task force panel session was coordinated with a related panel session on Grid code impacts on Excitation Systems.

During the Subcommittee meeting on Tuesday (19-Jul), the team was polled regarding attendance at the IEMDC meeting in 2016. There was no immediate feedback, but WG’s chairs will check with their members. Similarly, the team was polled regarding interest in a new WG to revisit the IEEE 1129 Guide for Machine Monitoring. Several folks expressed interest, and John Yagielski will follow-up.

Regarding meeting schedule for 2017, it appears GSC will request the same set of meetings as 2016. This includes a Grid Task Force Panel session. The GSC meeting request will likely be 2 hours, rather than 4.

Kiruba asked for potential nominations on the Supersession regarding integration of renewables.

## Motors Subcommittee – Dan Ionel

This year was an election year, and a new secretary was elected to support the progression of leadership. A written report was submitted and read.

They expect to have 4 panel sessions for 2017.

A WG is being formulated to create a standard from the existing IEEE 1812 Guide for PM Motor Testing) WG is being constructed to create a standard from the existing guide.

The IEMDC is the anniversary session in 2017. The subcommittee has done a fantastic job as the organizer and host of the IEMDC.

## Materials Subcommittee (MSC) – Jim Lau (for Aleksandra Jeremic)

Jim Lau provided the report. He noted that the group met at the DIS, and will meet next in Toronto. It was also an election year, and the organization chart will be updated accordingly.

Below is a highlight of standards being actively worked within the MSC.

Std. 43 – Completed recently.

Std. 56 – Balloting Complete. On to REVCOM.

Std. 95 – Working group will convene shortly.

Std. 117 – Latest revision is complete.

Std. 433 -- Current chair is looking for WG members.

Std 434 – In-process.

Jim Lau noted that the IEC has been developing turn insulation testing standards, and members of the MSC have been supporting their development, as a Task Force. At this point, the general consensus is to not develop a parallel IEEE Standard.

He also noted the development of a Guide on stator bar cross section examination following destructive failure, without acceptance criteria.

## Renewable energy machines and systems – Istvan Erlich

Istvan provided a written report, and it was reviewed during the meeting.

The subcommittee has no standards so far – Focus on machines.

The S/C Meeting was held on Monday. There were 15 attendees.

The subcommittee contributions are focused on grid codes, rather than new IEEE standards.

Three panels were held this year:

* Operating power system without synchronous machines – 80 attendees
* Marine Hydrokinetics - ~20 attendees
* Reactive power capability of wind turbines

Panels planned for next year include:

* 100% Inverter based systems
* Marine hydrokinetics continued
* Reactive power capability of wind turbines
* Interconnection – 45 attendees
* Synthetic Inertia
* Energy Storage
* Weak Grid

The subcommittee is recommending a ½ day Tutorial on Machine – Converter design. This plan will be confirmed by 22-August-2016.

Further the subcommittee will decide on establishing a WG in 2017.

There was discussion on the IEEE C50.12 standard on Hydro-Generators. It is a renewable resource. The GSC will coordinate with the Renewables SC going forward, including contacting Randy Groves. Edson Bortoni also expressed interest – with a strong desire to maintain it within the GSC.

**(b) Liaisons**

## IAS (Industry Applications Society)

Andy Knight reported that members of the society are involved in the machine standards within the PES (ex: IEEE 1812). He summarized the revised leadership.

## Power System Relaying – N. Nilsson

Nils Nilsson had previously sent his report which is given in Attachment C. Three meetings were held in 2016. Nils noted that the committee does not have business meetings at the General Meeting, but does have paper and panel sessions. He highlighted some of the WG’s, especially with regards to Grid Code considerations.

## IEC / ISO Liaison –

Jim Lau did receive two reports. They were not read, but are available in these minutes. See Attachment J.

## IEMDC – O. Mohammed for Dan Ionel

Mohammed highlighted the IEMDC in Miami, May 2017. It is hosted by EMC this year. Paper submission is planned to open 1-Aug-2016. The 2019 IEMDC will be in San Diego.

**(c) Working Groups**

## Awards - Recognitions – N. Nilsson

Nils presented the awards for 2016.

He introduced Bill McCown as the 2016 IEEE PES Cyril Veinott Award. This award recognizes outstanding contributions in the field of electromechanical energy conversion. Lon Montgomery introduced Bill, and provided a summary of his distinguished career.

## Fellows Coordinator – N. Nilsson

This year 2 members of the EMC were appointed as IEEE Fellows:

* Cylde Maughn (Generator Subcommittee)
* Ping Zhou (Motor Subcommittee)

Nils also noted that there are 4 nominations in process for 2017 as well.

## The Distinguished Service Award

The distinguished Service Award went to Alexsanda Jeremic – (Materials Subcommittee). Jim Lau took the award in her absence.

## The EMC is recognizing three (3) outstanding technical papers in 2016. They are as follows:

1. V. Nasirian, A Davoudi, F Lewis, J Guerrero: Adaptive Droop Control for DC Distribution Systems, Transactions on Energy Conversion, Vol. 29, No. 4, December 2014, pp. 944-956

This paper was also recognized as the Best Paper at the Power & Energy Society level as well.

1. E. Prieto-Araujo, Junyent-Ferré, D. Lavèrnia-Ferrer, O. Gomis-Bellmunt: Decentralized Control of a Nine-Phase Permanent Magnet Generator for Offshore Wind Turbines, Transactions on Energy Conversion, Vol. 30, No 3, September 2015, pp. 1103-1112.
2. A. Chiba, K. Kiyota, N. Hoshi, M. Takemoto, S Ogasawara; Development of a Rare-Earth-Free SR Motor with High Torque Density for Hybrid Vehicles Transactions on Energy Conversion, Vol. 30, No. 1, March 2015, pp. 175-182.

Nils provided advice on Fellow recommendations.

Kiruba recognized Nils’s continued excellent contributions as the Awards Chair.

# (d) Other

## Long Range Planning – Kiruba Haran

The Long Range Planning meeting was held on the Sunday afternoon 17 July 2016. The topics of discussion were covered in his EMC Chair Report (documented above). Minutes will be available on the EMC website.

# Other business

## Working Group Procedures Manual

WG P&P was approved this week (19-Jul). Kiruba reminded the group to follow the O&P manual.

## ED&PGC, Excitation Systems and Controls Subcommittee

Nils Nilsson clarified some history, but is not aware of any recent interest in realigning the subcommittee. Kiruba will confirm that there is no interest.

## Planned sessions and panels for 2017 PES-GM

The minutes above document anticipated Panels. Kiruba asked that Subcommittees consider only adding 1 more vs last year, to help minimize impact.

He reminded the team to consider organizing Tutorials when new standards are issued. Please mail Kay with requests. Kiruba also recommended considering Webinars as well.

Finally, Kiruba recommended that WG’s consider submitting a poster regarding key WG accomplishments (ex: New standard; Technical report, etc).

## Sub-committee websites

Dionysis Aliprantis continues to perform an excellent job on the website maintenance.

## AIAA collaboration, liaison

Kiruba reported on a workshop regarding development of power systems for hybrid propulsion for aircraft. This is a continuation of recent cooperation.

# New Business

* Lon Montgomery highlighted that Intellectual Property (IP) restrictions that are barriers to industrial representatives presenting at IEEE conferences. Jim Lau recounted attempts to achieve cooperative considerations between IEEE and select industrial representatives. Malia Zaman will follow-up, based on a written request from Lon Montgomery.
* Lon Montgomery noted that various members of the Grid Task Force submitted pre-prepared questions at the Plenary session. None were accepted to be addressed. He highlighted that the IEEE is uniquely positioned to influence the strategy for renewable integration – and has hopes that higher levels of the PES might provide better support and guidance. Specifically, Lon requested that Kiruba pursue a written answer for questions that he’s submitted. The group also encourages the Grid Code task force to use all available options to publicize the work.
* Jim Lau proposed to adjourn the meeting and Gayland Bloethe seconded to end the meeting. Everyone is in favour to end the meeting.

The EMC website is located here: <http://www.ewh.ieee.org/soc/pes/emc/>

**ATTACHMENTS TO THE MINUTES**

A EMC Organization Chart

B Updated membership list and attendance Sheet

C Power System Relay Committee Liaison Report

D Generator Subcommittee Report

E Motor Subcommittee Report

F Materials Subcommittee Report

G Renewables Subcommittee Report

H ISO Liaison Report

K Standards Coordinator Report

**ATTACHMENT A: PES-EMC ORGANIZATIONAL CHART - 2016**

**Officers**

**Chairman**

Chair: Kiruba HARAN

Past Chair: Kevin MAYOR

**Vice Chairman**

Kay CHEN

**Secretary**

John YAGIELSKI

**Representatives and Coordinators**

**Rep. to TCPC**

Kay CHEN

**STDs Coordinator**

Innocent KAMWA

**Fellows Coordinator**

Nils NILSSON

**Webmaster**

Oleg Wasynczuk

**Webmaster**

Dionysios ALIPRANTIS

**Awards & Recognition**

Nils NILSSON

**Liaisons**

**Excitation EDPG**

Robert THORNTON-JONES

**PSRC**

Nils NILSSON

**IAS**

Dan IONEL

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

**Materials**

- *Nancy FROST*

*- Aleksandra JEREMIC*

*- Paul GABERSON*

**Motors**

- Masahide OSHIMA

- Yao DUAN

-Burlent SARLIOGLU

**Generators**

Gayland BLOETHE

Raul RICO

Andreas Kappel

**Renewable Energy Machines & Systems**

- Istvan ERLICH

- Ed MULJADI

- TBC

**Attachment B: EMC Rosters of Voting & Corresponding Members**

(note 2016 attendance is including in Voting Member List)



**Attachment C: Power Systems Relay Committee Liaison Report**



**Attachment D: Generator Subcommittee Report**



**Attachment E: Motor Subcommittee Report/ Minutes**

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**Attachment F: Materials Subcommittee Report/Minutes**

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**Attachment G: Renewables Subcommittee Report/Minutes**

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**Attachment J: ISO Liaison Report**



**Attachment K: Standards Coordinator Report**

