

**IEEE Electrical Machine Committee (EMC)
Generator Subcommittee (GSC)
Minutes of Meeting
Tuesday, July 26, 2011, 10-noon
Location – Detroit, MI**

1. Welcome and Introduction

The meeting was called to order by John Ready. Attendees briefly introduced themselves (attachment A).

John Ready recognized Soo Kim (in absentia) as the IEEE standards coordinator. Soo has changed positions, and a new coordinator has been assigned.

2. Approval of 2010 Minutes

The meeting minutes were not available for vote. John Ready proposed that they be distributed electronically. If no objections are received within 1 month, they will be considered accepted. The subcommittee approved the suggested approach.

3. Approval of the 2011 Agenda

Copies of the proposed 2011 agenda were distributed (attachment B). The 2011 agenda was approved as submitted.

4. Elections of Officers

John Ready explained the process. John Yagielski volunteered to be the incoming secretary. The GSC Officers for the next two years are as follows:

- Chairperson: Kay Chen
- Vice-chairman: Mohamed El-Sharkawi
- Secretary: John Yagielski

The nominations were voted on and approved by the group with a unanimous decision.

5. Officers Report

John Ready provided a brief summary of the subcommittee status, attendance, etc. He requested any additional WG reports be submitted for inclusion in the minutes.

6. Working Group Reports

WG1 Awards

See Appendix C for the working group written report.

Ric Nilsson updated the subcommittee on the WG activity. Mike Brimsek received the service award; The prize paper award went to L. Bash, et al. The prize standard was IEEE 115. Additionally EMC won the WG award; Kay Chen won the new graduate award (GOAL).

He encouraged the subcommittee members to submit for the various PES awards. There were no nominees for Fellows in 2011 from the EMC.

Kay Chen thanked Ric Nilsson for his work

WG4 Grid Induced Torsional Vibration

Tom Wait was not available, but Mike Brimsek reported that the WG is planning to have a panel session. He noted that panel participants need to submit a paper in order to participate.

WG5 Revision of IEEE 492

Robert Brummond was not available. There was no report. John Ready noted that the WG started in 2010 according to the 2010 minutes (Attachment B). The 2010 notes reflected that a PAR had not been completed as of 2010.

John Ready will provide Kay C with the contact to follow-up on status.

WG6 Application Guide for Superconducting Machines

Kiruba Haran was not available. Haran is a member, and reported that the team is dormant. The previous chairman left, and there has been little activity. A draft guide for testing written in 2006, but no PAR was submitted. Ric Nilsson reported that the WG recognized that machines were not ready for standards, but may morph to a paper.

Again, John Ready will provide Kay C with the contact to follow-up on status.

WG7 Revision of IEEE

NONE (Work completed)

WG8 Harmonization of IEC and IEEE Concerning IEEE C50

Kay Chen provided an update on the progress. The existing standard was re-affirmed. A PAR was approved in June. The WG is actively working on the revisions, targeting first ballot for the end of 2011, and completion of the PAR in 2012.

She also noted efforts to by Hattori-san to work with the IEC MT6 that maintains IEC 60034-3.

Thirdly, she explained the intent to have a panel session on the influence of grid code changes on machines, and the potential impact on the relevant machine standards.

Various subcommittee members provided additional details on the paper submission process required to support a panel session. It is important to identify the EMC as the primary focus, so that it is not inadvertently routed to a T&D.

See Appendix D for the written working group update.

WG9 Renewable Energy Machines

Mohamed El-Sharkawi was not available. Ric Nilsson noted that WG9 should become a liason report, as the WG is now a separate subcommittee.

WG10 Generator Monitoring

Izzy was not available. Kay Chen noted that (based on WG10 activity on 24-Jul) the plan is to resurrect IEEE 1129. Next steps include review of existing literature, and develop a draft table of monitoring devices and concepts.

A WG9 meeting is planned for 2012 at the Summer Power Conference. A PAR will be required for a completed draft.

7. Liason Reports

Materials Subcommittee

No one was present. Kay will contact for an update.

Excitation Systems and Controls Subcommittee

No one was present.

Power Systems Relay Committee

Ric Nilsson reported on the activity. See the written report in Appendix E.

There is a WG on protection for pumped storage hydro. This has been slowed. The generator tutorial has been presented at several other conferences.

Hydro Power Subcommittee

Randy Groves noted WG meetings & activities, including revision of the standard for shaft runout. The next WG meeting will be at the 2012 PES Summer Conference.

IEEE 1095 (installation) is under revision as well. The PAR is in process; and the update is out for balloting.

Motors Subcommittee

Nick Stranges reported. IEEE 112 is under revision. There is a WG developing a trial guide for testing of PM machines. A PAR is out for 1415. There were three panel sessions at 2011 PES summer meeting. In 2012, panel sessions are planned for PM machine testing, and non-rare earth permanent magnet machines.

Lon Montgomery noted the possible impact of grid codes on motors requirements. Nick Stranges asked to be provided info on grid code panel session.

Ric Nillson noted that the station design WG should be included. Additional discussion extended to NERC, etc. Mike Brimsek will attempt to locate an appropriate T&G contact.

8. Standards Review and Status

Innocent was not available. It will be covered in the EMC general meeting. Appendix F contains the written report, submitted following the session.

9. Website Report

Oleg Wasynczuk reported. The site has been updated to the PES web site standards. The URL for the site is: <http://www.ewh.ieee.org/soc/pes/emc/index.html>

10. Old Business

There was no old business.

11. New Business

There was no new business. Mike B noted that new business should include any activity required to maintain standards that may be expiring.

Mike Sedlak noted that EPRI has asked for collaboration on End Winding (EW) vibration, targeting a guide on EW vibration, covering theory, monitoring, and repair.

EPRI has a working group on EW condition monitoring. He noted that many users are seeing EW vibration issues on smaller units. Several members noted a working group in IEC, but it appears to be inactive. There is CIGRE activity for EW vibration monitoring on hydro units.

The EPRI turbine-generator (T-G) users group is in Albany, NY in two weeks. Mike Sedlak will follow up with EPRI on the exact info desired by EPRI.

John Ready asked the team about harmonizing the IEEE 115 with the equivalent IEC testing standards. Kay Chen noted that the WG8 did identify IEEE C50.13.

IEEE 115 was just issued. There was no explicit plan to harmonize as part of the previous PAR. It was valid until 2014. The need for a PAR to include harmonization should be considered toward the end of 2013 (following C50.13 revision).

Haran also noted that standards on wind turbine machines (from IEC) will be forthcoming.

Ric Nilsson asked about the practice of assigning WG numbers. The Motors group plans to use the standard number as a working group number. If so standard exists, then a WG number should be assigned. Mike Brimsek will check on the proper designation for groups that are operating prior to a PAR.

John Ready noted that the next meeting will be at the PES General Meeting in 2012.

The subcommittee discussed conflicts with motors and renewable subcommittees. It will be discussed at the main meeting.

The meeting was adjourned at 11:47am.

Attachments

Appendix A. Attendance List

John Ready
Mike Sedlak
N.E. Nilsson
Kenichi Hattori
John Yagielski
James DeHaan
Masahide Ooshima
Bob Gray
Singo Inamura
Haran Karmaker
Kevin Mayor
William (Bill) McCown
Nick Stranges
Gabriel Haynes
Lon Montgomery
Jim Michalec
Oleg Wasynczuk
Mike Brimsek
Randall Groves
Devin Lunney
Akira Chiba
William Bloethe
John Roach
Om Malik
Kay Chen

Appendix C: WG1 Report

October 14, 2010

Michael Brimsek
Minnesota Power
30 West Superior Street
Duluth, MN 55802

Dear Mike:

Nomination of EMC Working Group Awards

As the Chairman of the Awards and Recognition Working Group, I am pleased to notify you that the nomination for awards is being submitted to the PES. First, let me thank all the members of the working group for their hard work in supporting this important EMC function. The nominations are as follows:

Prize Paper: "Incorporating Motion in Mesh-Based Magnetic Equivalent Circuits," Transactions on Energy Conversion, Vol. 25, No. 2, June 2010, pages 329-338. The authors are M. L. Bash, J. M. Williams and S. D. Pekarek.

Service Award: Michael Brimsek for distinguished service to the IEEE Power & Energy Society for leadership including serving as Chairman of the Electric Machinery Committee.

Prize Standard: IEEE Std. 115, Guide for Test Procedures for Synchronous Machines, Chaired by H. Karmaker. I Kamwa was the Co-Chair and R. Wamkeue was the Secretary.

By copy of this letter, I am notifying the members of the Awards and Recognition Working Group that nominations are now open for the awards to be nominated in 2011 and that they can forward to me any time up to May 10, 2011. Again, I want to thank the working group members for their tireless efforts in searching out the best work products for recognition.

Should you have any questions, do not hesitate to call me at (330) 482-9781.

Appendix D: WG8 Report

In 2010- 2011, WG8 successfully complete the reaffirmation process and conducted evaluation of the ballot feedback for future standard revision. Working group 8 had also completed comparing C50.13 with IEC 60034 1/2/3 and had conducted evaluation of the comparison results. Based on the ballot feedback as well as the comparison results, WG8 finalized a list of items to be considered for revision. WG8 successfully applied for a PAR in May to carry out the revision. WG met in Detroit this July and developed a preliminary ready for ballot draft at the end of the one week meeting. WG8 discussed the timeline of the PAR process and decided to make submission for initial ballot at the end of 2011. WG8 had also discussed to organize a panel session with the focus on "grid regulation" in 2012 meeting. In 2011, WG communicated with IEC/CIGRE and received positive feedback. In 2011-2012 WG8 will continue to communicate with IEC and CIGRE to collaborate on standards as well as other common interests.

Appendix E: Power System Relaying Committee Liaison Report

2011 LIAISON REPORT

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 Asheville, North Carolina, from May 16-19, 2011. The next meeting will be held in Minneapolis, Minnesota, from September 12-15, 2011. 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 Bob Pettigrew. The RMPS Chair is K. Stephan and the Vice-Chair is M. Yalla. Working Group (WG) activity is as follows:

- 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. There is a need to get the benefit of more industry experience. Consulting engineers and users will be contacted.
- J8. The Generator Tutorial Revision WG is chaired by Michael Thompson. It was established in 2007 and the output is a Tutorial. It was presented at the Petroleum and Chemical Industry Committee Conference (PCIC) in San Antonio, Texas, on September 23, 2010. Mike Thompson and Chuck Mozina presented the tutorial. Approximately 70 people attended the tutorial. The tutorial will also presented at the IAS Pulp and Paper Conference (PPIC) on June 23, 2011.
- J9. Jon Gardell chairs the Motor Bus Transfer WG. It was formed in 2006 and a report will be the WG product. The 1.33 per unit volts per hertz criteria of ANSI C50.41 may not guarantee a safe transfer. Jon Gardell started the meeting with a status report on Draft IV and the field measurement plans at the TECO plants. The monitoring equipment at the TECO Big Bend Station was not installed as hoped earlier this year. The next opportunity will be at least a year away. A presentation was made by Dale Finney on the analysis of field data from a motor bus transfer at the TECO Bayshore combined cycle plant. The data were analyzed independently by Dale (using Matlab) and Derrick Haas (using Mathcad) to determine the motor air gap torque. The air gap torque was found to be 6.5 perunit and the resultant volts per hertz was 1.2 per unit. It was concluded from this effort that readily available software can be used to make the air gap torque calculation with suitable attention to the varying frequency during the motor decay voltage.
- J10. Prem Kumar is the Chair of the revision of the Guide for AC Motor Protection, established in 2007. Revision of Draft 1 of C37.96 is in progress. WEG Motors Ricardo Santori from Brazil gave a presentation on salient aspects of motor design that would interest relaying engineers. The topics included development of the thermal overload curve of the motor and RTD locations in the motor windings.

N. E. Nilsson

June 1, 2011

Appendix F. Standards Review (report to EMC) for reference

EMC - Standard Coordinator Report July 25, 2011

I reviewed the status of PARs, Standards and Guides under EMC responsibility. The status of the PARs is summarized below. We have **25** active standards and guides (the same as the year before), **16** lapsed standards and guides (same number as the year before) and **11** on-going PARS (three more than in the year before). The actions to be taken for keeping up-to-date the approval of the PARs and for keeping live the Standards and Guides are identified. A summary of the specific approvals received since the July 2010 meeting of the EMC in Minneapolis are identified as well.

Information concerning the Standards Association (SA), Board of Governors, Committees of SA, the Development of standards, Recommended Practices and Guides and related issues is available on the following web site.

<http://standards.ieee.org/>

Some of the other web sites for obtaining useful information are as follows.

Information on	Web site address
Update your information with SA	http://standards.ieee.org/resources/development/
myBallot Voter presentation	http://standards.ieee.org/db/balloting/myballotdemo.ppt
myBallot Chair presentation	http://standards.ieee.org/db/balloting/myballotchairdemo.ppt
PAR application, extension and other forms	http://www.standards.ieee.org/guides/par/
Submitting a PAR	https://development.standards.ieee.org/kamwa/select-par-type
PAR Extension	http://standards.ieee.org/guides/par/extension.rtf

Style manual	http://www.standards.ieee.org/guides/style/2000Style.pdf
Template	http://www.standards.ieee.org/resources/spasystem/index.html
Up-load drafts for balloting	http://standards.ieee.org/eprocess/upload_balloting_file/
Request for invitation to ballot	http://standards.ieee.org/resources/development/ Follow: Balloting the Draft → Ballot Invitation → Requesting a Ballot Invitation
Join a balloting pool	
Submit request for initiating balloting	http://standards.ieee.org/resources/development/ Follow: Balloting the Draft → Sponsor Ballot → Requesting Initiation of a Ballot
Submit request for recirculation ballot	http://standards.ieee.org/resources/development/ Follow: Balloting the Draft → Sponsor Ballot → Requesting Initiation of a Ballot → Recirculation ballot
Status of standards etc	http://standards.ieee.org/db/status/index.shtml
NesCom activities	http://www.standards.ieee.org/board/nes/
RevCom activities	http://standards.ieee.org/board/rev/
SA Operations Manual	http://standards.ieee.org/sa/sa-om-toc.htm
SA Bylaws	http://standards.ieee.org/guides/bylaws/index.htm
SB Operations Manual	http://standards.ieee.org/guides/opman/index.html
SB Bylaws	http://standards.ieee.org/guides/bylaws/index.html

Some important Information

The IEEE-SA Standards Board Bylaws and the IEEE-SA Standards Board Operations Manual. The text of the changes made to these documents in 2005 can be found at <http://standards.ieee.org/board/pro/2005changes.pdf>

The IEEE Standards Association (IEEE-SA) Standards Board has launched a new online Project Authorization Request (PAR) Form. The upgraded online PAR Form (<http://standards.ieee.org/guides/par/>) leads you step-by-step through the PAR process.

Standards Coordination Effort

PARs applied for by all Committees of the Power Engineering Society (PES) are circulated among the Standards Coordinators of the PES Committees. Every PAR approved by the Standards Board is posted on the SA Web site at the following address.

<http://standards.ieee.org/board/nes/approved.html>

If you are interested in the development work planned in a PAR, contact the Chair of the Working Group that is developing the document and sign up for participating in the activity of that Working Group.

Standards Activities Since The July 2010 EMC Meeting

The status of the standards activities, which have taken place since the July, 2010, meeting of the EMC, are as follows.

➤ **Standards Published**

None

➤ **Standards reaffirmed**

C50.12-2005	IEEE Standard for salient-pole 50 Hz and 60 Hz synchronous generators and generator/motors for hydraulic turbine applications rated 5 MVA and above
C50.13-2005	IEEE Standard for cylindrical rotor 50 and 60 Hz synchronous generators rated 10 MVA and above
67-2005 492-1999	Guide for Operation and Maintenance of Turbine Generators Guide for Operation and Maintenance of Hydro-Generators

➤ **Standards withdrawn**

None

➤ **Standards approved**

None

➤ **Standards submitted for Balloting/ Recirculation by July 2011**

1255-2000	Guide for Evaluation of Torque Pulsations During Starting of Synchronous Motors
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➤ **Standards due for 5 year review in 2011 (this year)**

11-2000	Standard for Rotating Machinery for Rail and Road Vehicles
1255-2000	Guide for Evaluation of Torque Pulsations During Starting of Synchronous Motors
286-2000	Recommended Practice for Measurement of Power-Factor Tip-Up of Rotating Machinery Stator Coil Insulation.
434-2006	Guide for Functional Evaluation of Insulation Systems for Large High Voltage Machines

➤ **Standards due for 5 year review in 2012 (next year)**

95-2002	IEEE recommended practice for insulation testing of AC electric machinery (2300 V and above) with high direct voltage
252-1995	Standard Test Procedure for Polyphase Induction Motors having Liquid in the Magnetic Gap
1110-2002	Guide for Synchronous Generator Modeling Practices and Applications in Power System Stability Analyses
1553-2002	Test and Acceptance Criteria for Voltage-Endurance Testing of Form-Wound Coils and Bars used in Hydroelectric Generators and Large Pumped Storage Motors

The PARs approved since July, 2010, submitted, and the PARs for which extension has been applied are as follows. PARs, which will expire in 2011 are also listed. Applications for extending the life of these PARs must be submitted before the 18 October 2011 submittal deadline (for the December 2011 standards board meeting).

➤ **New PARs applied for**

PC50.13	EEE Standard for cylindrical rotor 50 and 60 Hz synchronous generators rated 10 MVA and above
P1310	Trial Use Recommended Practice for Thermal Cycle Testing of Form-Wound
P1415	Guide for Induction Machinery Maintenance Testing and Failure Analysis
P1434	Guide to Measurement of Partial Discharges in Rotating Machinery

➤ **New PARs approved/modified**

PC50.13	EEE Standard for cylindrical rotor 50 and 60 Hz synchronous generators rated 10 MVA and above
P1310	Trial Use Recommended Practice for Thermal Cycle Testing of Form-Wound
P1415	Guide for Induction Machinery Maintenance Testing and Failure Analysis
P1434	Guide to Measurement of Partial Discharges in Rotating Machinery

➤ **PAR Extensions applied for**

None

➤ **PAR Extensions approved**

None

➤ **PARs Withdrawn**

None

➤ **PARs expiring at the end of 2011 (this year)**

P1719 **Guide for Evaluating Stator Cores of AC Synchronous Electric Machines Rated 1 MVA and Higher**

➤ **PARs expiring at the end of 2012 (next year)**

P117 **Standard Test Procedure for Thermal Evaluation of Systems of Insulating Materials for Random-Wound AC Electric Machinery**

P1310 **Trial Use Recommended Practice for Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Generators**

SUBMITTAL DEADLINES & STANDARDS BOARD MEETING SCHEDULE

<http://standards.ieee.org/board/index.html>

PAR/Standard Submittal Deadline

18 February, 2011
6 May, 2011
29 July, 2011
17 October, 2011

Standards Board Meeting

June 14, 2011
September 8, 2011
December 5, 2011

For further information, see the attached spreadsheet

or contact: Innocent Kamwa - EMC Standards Coordinator at

kamwa@ireq.ca

EMC WG LISTING (<https://development.standards.ieee.org/kamwa/manage-committees>)

Errors and updates should be forwarded to the Stds coordinator (Innocent Kamwa) or the SA liaison (Laurie Policastro)

[myProject™](#) >> Manage Committees

Name	Designator	Contact	Liaison	Roster	Actions
Sponsor Committees					
Electric Machinery	PE/EM	Innocent Kamwa	Erin Spiewak	200	manage
Working Group Committees					
Generator Subcommittee	PE/EM/GEN-SC	John Ready	Erin Spiewak	21	manage

Generator SC - Test Procedure for Synchronous Machines - WG#7	PE/EM/GEN - WG115	Haran Karmaker	Erin Spiewak	17	manage
Generator SC - Generator Rewinds - WG#3	PE/EM/GEN - WG1665	William Bartley	Erin Spiewak	18	manage
Generator SC - Grid Induced Torsional Vibrations in Large Turbine Generators - WG#4	PE/EM/GEN - WG4	Innocent Kamwa	Erin Spiewak	3	manage
Generator SC - Operation and Maintenance of Hydro-Generators - WG#5	PE/EM/GEN - WG492	Innocent Kamwa	Erin Spiewak	9	manage
Generator SC - Application of Superconductor Machines - WG#6	PE/EM/GEN - WG6	Innocent Kamwa	Erin Spiewak	3	manage
Generator SC - Operation and Maintenance of Turbine Generators	PE/EM/GEN - WG67	Innocent Kamwa	Erin Spiewak	12	manage
Generator SC - Coordination of C50s and IEC - WG#8	PE/EM/GEN - WG8	Kay Chen	Erin Spiewak	6	manage
Generator SC - Renewable Energy Machines and Systems - WG#9	PE/EM/GEN - WG9	Innocent Kamwa	Erin Spiewak	6	manage
Materials Subcommittee	PE/EM/Matl - SC	Innocent Kamwa	Erin Spiewak	1	manage
Materials SC - Standard Test Procedure for Evaluation of Systems of Insulating Materials for Random-Wound AC Rotating Electrical Machinery	PE/EM/Matl - WG117	Nancy Frost	Erin Spiewak	5	manage
Materials SC - Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Generators	PE/EM/Matl - WG1310	Gregory Stone	Erin Spiewak	6	manage
Materials SC - Measurement of Partial Discharges in AC Electric Machinery	PE/EM/Matl - WG1434	William McDermid	Erin Spiewak	7	manage
Materials SC - Voltage Endurance Testing of Form-Wound Coils and Bars for Hydrogenerators	PE/EM/Matl - WG1553	Innocent Kamwa	Erin Spiewak	4	manage
Materials SC - Stator Core Evaluation of Synchronous Machines	PE/EM/Matl - WG1719	Glenn Mottershead	Erin Spiewak	8	manage

Materials SC - Thermal Evaluation of Insulation Systems	PE/EM/Matl - WG1776	Chuck Wilson	Erin Spiewak	18	manage
Materials SC - Qualification and Type Tests for Partial Discharge (PD)- Free Electrical Insulation Systems Used in Rotating Electrical Machines Fed from Voltage Converters	PE/EM/Matl - WG1798	Meredith Stranges	Erin Spiewak	3	manage
Materials SC - Quality Control Testing of External Discharges on Form-Wound Coils, Roëbel Bars, Vacuum Pressure Impregnated Stator Insulation and Fully Assembled Stator Windings.	PE/EM/Matl - WG1799	Remi Tremblay	Erin Spiewak	4	manage
Materials SC - Measurement of Power Factor Tip-Up of Electric Machinery Stator Coil Insulation	PE/EM/Matl - WG286	Innocent Kamwa	Erin Spiewak	3	manage
Materials SC - Testing Insulation Resistance of Rotating Machinery	PE/EM/Matl - WG43	Ian Culbert	Erin Spiewak	6	manage
Materials SC - Insulation Testing of AC Electric Machinery with High Voltage at Very Low Frequency	PE/EM/Matl - WG433	Howard Sedding	Erin Spiewak	11	manage
Materials SC - Functional Evaluation of Insulation Systems for AC Electric Machines	PE/EM/Matl - WG434	Lorelynn Rux	Erin Spiewak	15	manage
Materials SC - Turn Insulation of Form-Wound Stator Coils	PE/EM/Matl - WG522	Chuck Wilson	Erin Spiewak	13	manage
Materials SC - Insulation Maintenance of Electric Machines	PE/EM/Matl - WG56	Douglas Conley	Erin Spiewak	13	manage
Materials SC - Diagnostic Field Testing of Electric Power Apparatus - Electrical Machinery	PE/EM/Matl - WG62.2	Innocent Kamwa	Erin Spiewak	3	manage
Materials SC - Insulation Testing of AC Electric Machinery with High Direct Voltage	PE/EM/Matl - WG95	William McDermid	Erin Spiewak	11	manage
Motor Subcommittee	PE/EM/Motor - SC	Innocent Kamwa	Erin Spiewak	1	manage
Motor SC - Rotating Electric Machinery for Rail and Road Vehicles	PE/EM/Motor - WG11	Innocent Kamwa	Erin Spiewak	0	manage
Motor SC - Test Procedure for Polyphase Induction Motors and	PE/EM/Motor -	Nick Stranges	Erin	5	manage

Generators	WG112		Spiewak		
Motor SC - Evaluation of Torque Pulsations During Starting of Synchronous Motors	PE/EM/Motor - WG1255	Nick Stranges	Erin Spiewak	4	manage
Motor SC - Induction Machinery Maintenance Testing and Failure Analysis	PE/EM/Motor - WG1415	John Ready	Erin Spiewak	13	manage
Motor SC - Testing Permanent Magnet Machines	PE/EM/Motor - WG1812	Haran Karmaker	Erin Spiewak	2	manage
Motor SC - Test Procedure for Polyphase Induction Motors	PE/EM/Motor - WG252	Innocent Kamwa	Erin Spiewak	13	manage
Motor SC - Presentation of Thermal Limit Curves for Squirrel Cage	PE/EM/Motor - WG620	Innocent Kamwa	Erin Spiewak	53	manage

Projects

IEEE Guide for Synchronous Generator Modeling Practices and Applications in Power System Stability Analyses	PE/EM/GEN-SC/1110	John Ready	Erin Spiewak	7	manage
IEEE Standard for Salient-Pole 50 Hz and 60 Hz Synchronous Generators and Generator/Motors for Hydraulic Turbine Applications Rated 5 MVA and Above	PE/EM/GEN-SC/C50.12	John Ready	Erin Spiewak	53	manage
IEEE Guide for Test Procedures for Synchronous Machines Part I--Acceptance and Performance Testing Part II--Test Procedures and Parameter Determination for Dynamic Analysis	PE/EM/GEN - WG115/115	Haran Karmaker	Erin Spiewak	73	manage
IEEE Guide for the Rewind of Synchronous Generators, 50 Hz and 60 Hz, Rated 1 MVA and Above	PE/EM/GEN - WG1665/1665	William Bartley	Erin Spiewak	62	manage
IEEE Guide for Operation and Maintenance of Hydro-Generators	PE/EM/GEN - WG492/492	Innocent Kamwa	Erin Spiewak	54	manage
IEEE Guide for Operation and Maintenance of Turbine Generators	PE/EM/GEN - WG67/67	Innocent Kamwa	Erin Spiewak	56	manage
Standard for Cylindrical-Rotor 50 Hz and 60 Hz Synchronous Generators Rated 10 MVA and Above	PE/EM/GEN - WG8/PC50.13	Kay Chen	Erin Spiewak	55	manage

Standard Test Procedure for Thermal Evaluation of Systems of Insulating Materials for Random-Wound AC Electric Machinery	PE/EM/Matl - WG117/P117	Nancy Frost	Erin Spiewak	2	manage
Recommended Practice for Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Rotating Machines	PE/EM/Matl - WG1310/P1310	Richard Huber	Erin Spiewak	61	manage
Guide for the Measurement of Partial Discharges in AC Electric Machinery	PE/EM/Matl - WG1434/P1434	William McDermid	Erin Spiewak	11	manage
IEEE Standard for Voltage Endurance Testing of Form-Wound Coils and Bars for Hydrogenerators	PE/EM/Matl - WG1553/1553	Aleksandra Jeremic	Erin Spiewak	41	manage
Guide for Evaluating Stator Cores of AC Synchronous Electric Machines Rated 1 MVA and Higher	PE/EM/Matl - WG1719/P1719	Glenn Mottershead	Erin Spiewak	2	manage
IEEE Recommended Practice for Thermal Evaluation of Unsealed or Sealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-Insulated Stator Coils for Machines Rated 15 000 V and Below	PE/EM/Matl - WG1776/1776	Chuck Wilson	Erin Spiewak	69	manage
Guide for Qualification and Type Tests for Partial Discharge (PD)-Free Electrical Insulation Systems Used in Rotating Electrical Machines Fed from Voltage Converters	PE/EM/Matl - WG1798/P1798	Meredith Stranges	Erin Spiewak	52	manage
Recommended Practice for Quality Control Testing of External Discharges on Form-Wound Coils, Roebel Bars, Vacuum Pressure Impregnated Stator Insulation and Fully Assembled Stator Windings	PE/EM/Matl - WG1799/P1799	Remi Tremblay	Erin Spiewak	2	manage
IEEE Recommended Practice for Measurement of Power Factor Tip-Up of Electric Machinery Stator Coil Insulation	PE/EM/Matl - WG286/286	Douglas Conley	Erin Spiewak	6	manage
Recommended Practice for Testing Insulation Resistance of Electric Machinery	PE/EM/Matl - WG43/P43	Ian Culbert	Erin Spiewak	10	manage
IEEE Recommended Practice for Insulation Testing of AC Electric Machinery with High Voltage at Very Low Frequency	PE/EM/Matl - WG433/433	Stefano Bomben	Erin Spiewak	4	manage
IEEE Guide for Functional Evaluation of Insulation Systems for AC Electric Machines Rated 2300 V and Above	PE/EM/Matl - WG434/434	Lorelynn Rux	Erin Spiewak	3	manage
IEEE Guide for Testing Turn Insulation of Form-Wound Stator Coils for Alternating-Current Electric Machines	PE/EM/Matl - WG522/522	Chuck Wilson	Erin Spiewak	64	manage

IEEE Guide for Diagnostic Field Testing of Electric Power Apparatus - Electrical Machinery	PE/EM/Matl - WG62.2/62.2	Innocent Kamwa	Erin Spiewak	<u>73</u>	manage
IEEE Recommended Practice for Insulation Testing of AC Electric Machinery (2300 V and Above) With High Direct Voltage	PE/EM/Matl - WG95/95	William McDermid	Erin Spiewak	<u>11</u>	manage
IEEE Standard for Rotating Electric Machinery for Rail and Road Vehicles	PE/EM/Motor - WG11/11	Innocent Kamwa	Erin Spiewak	<u>3</u>	manage
Standard Test Procedure for Polyphase Induction Motors and Generators	PE/EM/Motor - WG112/P112	Nick Stranges	Erin Spiewak	<u>74</u>	manage
IEEE Guide for Evaluation of Torque Pulsations During Starting of Synchronous Motors	PE/EM/Motor - WG1255/1255	Innocent Kamwa	Erin Spiewak	<u>28</u>	manage
Guide for Induction Machinery Maintenance Testing and Failure Analysis	PE/EM/Motor - WG1415/P1415	John Ready	Erin Spiewak	<u>7</u>	manage
Guide for Testing Permanent Magnet Machines	PE/EM/Motor - WG1812/P1812	Haran Karmaker	Erin Spiewak	<u>0</u>	manage
IEEE Standard Test Procedure for Polyphase Induction Motors Having Liquid in the Magnetic Gap	PE/EM/Motor - WG252/252	Innocent Kamwa	Erin Spiewak	<u>11</u>	manage
IEEE Guide for the Presentation of Thermal Limit Curves for Squirrel Cage Induction Machines	PE/EM/Motor - WG620/620	Innocent Kamwa	Erin Spiewak	<u>3</u>	manage

EMC ACTIVE PAR LISTING (<https://development.standards.ieee.org/pub/active-pars?n=18>)

Errors and updates should be forwarded to the Stds coordinator (Innocent Kamwa) or the SA liaison (Laurie Policastro)

<u>Sponsor</u> ▲	<u>PAR Number</u>	<u>Title</u>	<u>URL</u>
PE/EM	P43	Recommended Practice for Testing Insulation Resistance of Electric Machinery	https://development.standards.ieee.org/get-file/P43.pdf?t=63333600003
PE/EM	P112	Standard Test Procedure for Polyphase Induction Motors and Generators	https://development.standards.ieee.org/get-file/P112.pdf?t=63340900003
PE/EM	P117	Standard Test Procedure for Thermal Evaluation of Systems of Insulating Materials for Random-Wound AC Electric Machinery	http://standards.ieee.org/board/nes/projects/117.pdf
PE/EM	P1310	Recommended Practice for Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Rotating Machines	https://development.standards.ieee.org/get-file/P1310.pdf?t=64023000003
PE/EM	P1415	Guide for Induction Machinery Maintenance Testing and Failure Analysis	https://development.standards.ieee.org/get-file/P1415.pdf?t=70288700003
PE/EM	P1434	Guide for the Measurement of Partial Discharges in AC Electric Machinery	https://development.standards.ieee.org/get-file/P1434.pdf?t=84910000003
PE/EM	P1719	Guide for Evaluating Stator Cores of AC Synchronous Electric Machines Rated 1 MVA and Higher	http://standards.ieee.org/board/nes/projects/1719.pdf
PE/EM	P1798	Guide for Qualification and Type Tests for Partial Discharge (PD)-Free Electrical Insulation Systems Used in Rotating Electrical Machines Fed from Voltage Converters	https://development.standards.ieee.org/get-file/P1798.pdf?t=65588400003
PE/EM	P1799	Recommended Practice for Quality Control Testing of External Discharges on Form-Wound Coils, Roebel Bars, Vacuum Pressure Impregnated Stator Insulation and Fully Assembled Stator Windings	https://development.standards.ieee.org/get-file/P1799.pdf?t=65588600003
PE/EM	P1812	Guide for Testing Permanent Magnet Machines	https://development.standards.ieee.org/get-file/P1812.pdf?t=22542400003

Appendix G. E-mail distribution list

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