

Minutes of the October 31, 2008 Meeting of the IEEE Materials Subcommittee of the Electric Machinery Committee

Date: Friday, October 31, 2008

Time: 1500 – 1700 hours

Location: Delta Hotel, 690 René Lévesque East, Québec City, QC, Canada G1R 5A8

Room: Montcalm 3rd Floor

1. The meeting was called to order by the Chair at 15:08. The agenda and attendance sheet were distributed and introductions were made.

Attendees: C.A. Wilson, **Chair**; Aleksandra Jeremic, **Acting Secretary**; Ray Bartnikas, Stefano Bomben, Andy Brown. Mark Bruintjies, Doug Conley, Ian Culbert, Michael Gagne, Gary Heuston, Richard Huber, Laurent Lamarre, William McDermid, Charles Millet, Glenn Mottershead, Sophie Noel, Jeff Sheaffer and Remi Tremblay.

2. Approval of the Minutes of the Last Meeting:

Moved: Doug Conley **Second:** Stefano Bomben

3. Chair's Comments

- IEEE Standards Association requires that a request be made at each WG meeting for disclosure (identification) of any patents or copyrights that may be related to this work.
- IEEE Dictionary – Chuck Wilson has a hard copy.
- Working group Chairs are entitled to access the IEEE Dictionary from the IEEE website.

4. Standards Coordinator Report and Discussion

- Innocent Kamwa is the Standards Coordinator for the Electric Machines Committee.
- Chuck Wilson will forward today's Meeting Minutes to him after this meeting.
- 95-2002 (reaff 2007) *IEEE Recommended Practice for Insulation Testing of Large AC Rotating Machinery with Direct Voltage* - No work needed at this time.
- 286-2000 (reaff 2006) *IEEE Recommended Practice for Measurement of Power Factor and Power Factor Tip-up of Rotating Machinery Stator Coil Insulation* - No work needed at this time.
- 304-1977 (reaff 1991) *IEEE Standard Test Procedure for Evaluation and Classification of Insulation Systems for Direct-Current Machines* This document has been administratively withdrawn. Dr. Gupta completed this process.
- 522-2004 *IEEE Guide for Testing Turn-to-Turn Insulation on Form-Wound Stator Coils for Alternating-Current Rotating Electric Machines* - No work needed at this time. Chuck Wilson will start re-affirmation process in 2009.

- *1043-1996 (reaff 2003) IEEE Recommended Test Procedure for Performing Voltage-Endurance Testing of Form-Wound Coils and Bars* – Materials SC needs to consider working on this standard. Last Meeting: Greg Stone suggested it should be reaffirmed – group agreed. ACTION: Chuck Wilson will move forward with paperwork. CAW Footnote: According to Soo Kim, IEEE liaison, Sudhaker Cherukupalli has initiated this action.
- *1107-1996 IEEE Recommended Practice for Thermal Evaluation of Sealed Insulation Systems for AC Electric Machinery Employing Random-Wound Stator Coils* – Administratively withdrawn. Information to be included as annex to 117 ACTION: Nancy Frost will incorporate it as Annex in P117.
- *1434-2000 (reaff 2005) IEEE Guide to the Measurement of Partial Discharges in Rotating Machinery* - No work needed at this time.
- *1553-2002 IEEE Test and Acceptance Criteria for Voltage-Endurance Testing of Form-Wound Coils and Bars used in Hydroelectric Generators and Large Pumped Storage Motors* - Reaffirmation was completed in 2007 by Aleksandra.

Comment: Remy Tremblay commented that Schedule B might not be the most appropriate, as per his experience with the temperature observed at the stress grading coating of 163 deg C – this exceeded 155 deg C limit.

- *433-1974(1991) IEEE Recommended Practice for Insulation Testing of Large AC Rotating Machinery with High Voltage at Very Low Frequency* ACTION: Stefano is working on this as a recirculation to deal with the points that were under possible contention. Report: Stefano Bomben reported that all comments were dispositioned, Dr. Sedding will be obtaining references, and Prof. Bartnikas will re-write the introduction.
- *434-2006 IEEE Guide for Functional Evaluation of Insulation Systems for AC Electric Machines Rated 2300 Volts and Higher (completed)* - No work needed at this time.

5. Working Group Reports and Discussion

- *43-2000 IEEE Recommended Practice for Testing Insulation Resistance of Rotating Machinery*, **Chair: Ian Culbert**

Ian Culbert reported that all action items were completed, and some improvements on the standard are to be performed. The Standard was re-affirmed by Andy Brown. There were 23 attendees at this 3 hour meeting.

- *56-1977 (reaff 1991) IEEE Guide for Insulation Maintenance of Electric Machines Rated 35 kVA and Higher*, **Chair: Doug Conley** This document has been administratively withdrawn. Should go to straw ballot, and submit to IEEE for format review prior to sending out for ballot. ACTION: Doug Conley

This meeting lasted for 2+ hours and was attended by 20 people. Doug reported that he had formatted the document per the latest IEEE format standard requirements. It was not fully proofed for this meeting. It is still to be proofed by the following members: Meredith Stranges, Chuck Wilson and Aleksandra Jeremic. It will be submitted to the real balloting process, as Doug believes it will be fully prepared in the new year. During the previous meeting in Vancouver the Group approved it to go for the “straw ballot”.

- *117-1974 (reaff 1991) IEEE Standard Test Procedure for Evaluation of Systems of Insulating Materials for Random-Wound AC Electric Machinery, Chair: Nancy Frost* This document has been administratively withdrawn.

This meeting was cancelled, as Nancy Frost, Chair and the Vice-Chair, Roger Wicks of Dupont were not able to attend.

- *1310-1996 (2004 reaffirmed) IEEE Recommended Practice for Thermal Cycle Testing of Form-Wound Stator Bars and Coils for Large Generators, Chair: Greg Stone*

Richard Huber conducted this meeting (21 attendees, lasted for about 2 hours) and prepared the short summary below:

Only two Working Group members provided written comments on the latest draft. This led to much discussion regarding the preferred method of assessing the effect of thermal cycling and voltage endurance, and/or breakdown test. Three members were charged with providing words to describe their various positions. The Working Group members would then review these and decide how they should be used. Editorial comments will be implemented for the next meeting. At the next meeting might be ready for the ballot evaluation.

Other less controversial items were discussed and revisions to be carried out to allow circulation of another document before the next Working Group meeting.

Balloting among Working Group members might be possible after the next meeting.

- *EMC-SMC P1665 IEEE Guide for the Rewind of Synchronous Generators, 50 and 60 Hz, rated 1 MVA and above, Chair: William Bartley*

Glenn Mottershead conducted this meeting, which was attended by 21 people and lasted for about one hour. The Chair (William Bartley) had indicated to Glenn that there were very many outstanding issues. This Working Group would like to receive the Rev 13 of this document and discuss it at the next meeting, presumably in Montreal. Comments and minutes of this meeting will be sent to William Bartley by Glenn Mottershead.

- *P1719 IEEE Guide for Evaluating Stator Cores of AC Electric Machines Rated 1 MVA and Higher, Chair: Glenn Mottershead*

Glenn reported that the meeting started at 12:30 and ended at 14:45 pm, and was attended by 22 people. Working Group continued editing and went through 10% of the document. Glenn Mottershead requested 3 (three) hours for the upcoming meeting. Chuck Wilson suggested as an option the evening meetings could be held. Chuck Wilson commented that based on the past experiences compact schedule vs. single meetings throughout the conference were preferred by the members.

- *P1776 IEEE Recommended Practice for Thermal Evaluation of Sealed or Unsealed Insulation Systems for AC Electric Machinery Employing Form-Wound Pre-Insulated Stator Coils for Machines Rated 15000 Volts and Below, Chair: Chuck Wilson* Draft 12 (final) has been sent to IEEE for action. ACTION: IEEE Final – Draft 12 was submitted to IEEE and will be addressed by the Rev Com on Dec 9, 2008. Chuck Wilson expects its issue in the Spring of 2009.

- *P1798 - IEC 60034, Rotating Electrical Machines – Part 18-41: Qualification and Type Tests for Type I Electrical Insulation Systems Used in Rotating Electrical Machines Fed by Voltage Converters.* **Chair: Meredith Stranges**

- Straw ballot indicated acceptance by the Group;
- PAR submitted and obtained the number – P179~~6~~ 8;
- Meredith decided to pursue balloting process, regardless of the many comments received late from Jeff Hudson of Reliance, and will deal with his comments during the balloting process;
- Meredith assembled list of questions and will conference call with Soo Kim to determine the next administrative steps;
- It would be optimistic to assume the ballot will clear with no objections, so the next meeting is likely to feature the following agenda:
 - i) Assign meeting Secretary – Volunteers should contact Meredith;
 - ii) Discuss results of ballot and any comments;
 - iii) Determine if the Working Group needs to form and what its structure would be.
- Group favored the next meeting taking place at EIS 1-3 June, 2009 in Montreal, QC.
- Meredith requested 2 (two) hours for the next meeting.

- *Trial-Use Guide for UV and Blackout Test Inspection:* **Chair: Remi Tremblay**

Remi started the meeting at 9:15 and finished at 11:30 am. There were 24 attendees. The Group agreed to change the table of contents, and for the next meeting it will be completely revised draft. Remi will submit the PAR before the end of November, 2008. Remi requested 3 (three) hours for the next meeting.

- *Awards and Recognition.* **Chair: Hugh Zhu**

Hugh reported by email that he was not able to attend the meetings in Quebec City. He has not received any nominations so far this year. He wants to encourage the people to nominate the technical papers and people for a variety of the IEEE awards.

6. Liaison Reports

- IEC - No report
- CIGRE –Remi Tremblay attended the meeting, and Remi e-mailed the report of the four Advisory Groups to Chuck. I have attached these minutes of four meetings to the email.
- Electric Machines Committee - No report.
- Generator SC - Glenn reported that the meeting was held at Pittsburgh in July/08, there are minutes and Glenn will forward these to Chuck (turned out the minutes were not available - I will forward them later). Bill Bartley is the Chair and he has the number of working groups. There will be a re-write of IEEE Std 492 – Generator Maintenance and Operations Guide. It was not well attended in Pittsburgh, and if anyone is interested in 492 even as a correspondent it would be very well received, so please contact Bob Dramen or Glenn Mottershead

Ray Bartnikas inquired whether there are overlaps between Materials SC and Generator SC Working Groups. Chuck Wilson indicated that as he submits Materials SC meeting minutes to the EMC, there should not be any overlaps.

7. Old Business

Doug Conley has created a very good website for the Materials SC, where all Working Group Standards' versions and Meeting Minutes will be posted.

The website's link is: <http://ewh.ieee.org/cmte/pes/material/index.htm>

8. New Business

Please familiarize yourselves with the Group's website and start utilizing it.

9. Next Meeting Possible Spring, 2009 dates and sites for meetings:

The group voted unanimously to hold the spring meetings at the Electrical Insulation Conference (EIC) June 1-3, 2009 Montréal, Québec, Canada. Our meetings will be held on June 4th and 5th.

We could have the Fall Meetings at the CEIDP on Oct 18-21(22-23), 2009 in Virginia Beach, USA

10. Adjournment called for at 16:50

Moved for adjournment by Jeff Scheaffer. Seconded: Gary Heuston.

Aleksandra

Aleksandra Jeremic

Chuck

Chuck Wilson