U.S. National Committee of the International Electro technical Commission,

A Committee of the American National Standards Institute

Technical Advisory Group for IEC TC 14

**TAG Administrator:**

***National Electrical Manufacturers Association***

*1300 North 17th Street, Suite 1752, Rosslyn, VA 22209*

*Tel: 703-841-3252, fax: 703-841-3353*

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PLACE OF MEETING: Renaissance Grand Hotel

800 Washington Avenue

St. Louis, Missouri 63101

Room: Majestic B-C

DATE AND TIME: **Wednesday October 23rd, 2013**

 7:00-8:30AM

PRESIDING OFFICER: P. Hopkinson, Technical Advisor

SECRETARY: Steve Griffith, NEMA

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| Members Present:Raj Ahuja SPX Transformer Solutions, Inc.Robert Ballard ABB IncLarry Dix Quality SwitchSheldon Kennedy Niagara TransformerMario Locarno Doble Engineering Co.Richard Marek DuPontJeewan Puri Transformer Solutions Inc.Dan Sauer Cooper Power Systems by Eaton.Vijay Tendulkar ONYX Power, Inc. |
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| Others present: |
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Matthew Almquist ABB

Tom Breckenridge TB TCS Ltd.

Lars Brocke Haefely Test AG

Robert Brusetti Doble Engineering

Edwin Brush BBF & Associates

Eric Davis Burns & McDonnell

Keith Ellis Electric Connection, Inc.

Tim Gradnik EIMV

Jodi Haasz IEEE

Wolfgang Hauschild Dr. W. Hauschild

Martin Hinow HIGHVOLT

Thang Hochanh Alstom

Paul Jarman National Grid

Brad Jensen Burns & McDonnell

John John Virginia Transformer Corp.

Axel Kramer Maschinenfabrik Reinhausen

Matthew Lawrence Doble Engineering Co

Vinay Mehrotra SPX Transformer

Tomas Olsson ABB

Christopher Ploetner ABB Inc.

Mark Rivers Doble Engineering

Larry Rudolf AES

Jeremy Sewell Quality Switch

Devki Sharma Entergy

Ed Smith H-J Enterprises

Bengt-Olof Stenestam ABB

Troy Tanaka Burns & McDonnell

Luke VonderZel EPRI

Dharam Vir SPX Transformer

Baitun Yang Pennsylvania Transformer

Shirasaka Yukiyasu Hitachi Ltd.

Kipp Yule Bechtel Power Corp.

Dave Zabel S&C Electric

1. CALL TO ORDER

The meeting was called to order; meeting guidelines were reviewed and attendance

recorded. By show of hands it was determined that 11 members were present.

1. APPROVAL OF THE AGENDA

The presiding officer approved the agenda.

1. APPROVAL OF THE PREVIOUS MINUTES

The minutes of the meeting held March 19th, 2013 in Munich Germany were approved.

1. REVIEW AND UPDATE OF USNC ROSTERS FOR TC14

The roster was reviewed.

1. 2013 PLENARY MEETING

The last meeting of TC14 was just held October 17th-18th in Milwaukee, Wisconsin. Mr. Hopkinson asked Mr. Jarman to brief attendees on the meeting.

Mr. Jarman provided an update on the following TC14 standards activities. If present he called the respective working group convenor to provide the update

1. UPDATE ON TC14 STANDARDS ACTIVITIES
	1. IEC 60076-3 Ed 3.0: Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air.

It was reported that this was published in July. There is good alignment with IEEE.

* 1. IEC 60076-7 Ed 1.0 (2005-12-15): Power transformers - Part 7: Loading guide for oil-immersed power transformers (Loading Guide)

Mr. Marek who is one of the US Experts reported that work has started on this and that this group has had one meeting.

* 1. IEC 60076-10 Ed. 2.0 - Power transformers - Part 10: Determination of sound levels

Dr. Ploetner reported that this has been more aligned with IEEE. A CDV is up-coming on this document with final publication by the end of 2014. There was discussion concerning the annex tables if they should go in the appendix or the main standard. It was mentioned that NEMA TR-1 is currently the only standard that addresses sound levels, however these levels are high. One of the decisions coming out of the TC14 plenary meeting was to have CIGRE A2 consider providing a guide to transformer & reactor noise levels. This would provide a basis for understanding what ranges are typical, what is a low noise transformer, and what noise levels are achievable

* 1. IEC 60076-14 Ed.1.0 - Power transformers - Part 14: Design and application of liquid-immersed power transformers using high-temperature insulation materials

Mr. Marek reported that work on this is complete and the standard was published in September. Its companion IEEE document is C57.154

* 1. IEC 60076-15 Ed 1.0 (2008-02-27): Power transformers - Part 15: Gas-filled power transformers

It was reported that work is underway on this project. It was mentioned that there is a shortage of experts on the MT assigned to this.

* 1. IEC 60076-16 Ed. 1.0 - Power transformers - Part 16: Transformers for wind turbines applications

It was reported that there were good discussions with the IEEE WG for Wind Turbine Generator Transformers on how to proceed with the joint document. The next WG meeting is in London. IEEE WG members are welcome to attend. Another joint meeting is expected before the Spring IEEE 2014 meetings in Savannah, Georgia.

* 1. IEC 60076-19 TS Ed.1.0 - Rules for the determinations of uncertainties in the measurement of losses in power transformers.

Work is complete on this project. This was published as a technical standard.

* 1. IEC 60076-20 Power Transformers Part 20: Energy Efficiency

At the TC14 plenary meeting there was a decision to combine the (2) separate standards (60076-20 and 60076-20-2) back into one standard based on the CENELEC work done for TC14 on transformers above 36kV. Energy efficiency will be determined via three relevant methods: load/no-load losses, efficiency @ 50% rated power, and the PEI index.

It was mentioned that a separate proposal will be sent to NEMA for a proposed IEC standard to determine energy efficiencies for large transformers beyond 100MVA

* 1. IEC 60076-57-1202 Ed 1.0 Dual Logo IEEE/IEC standard for “Liquid Immersed Phase Shifting Transformers”

It was reported that there was a WG meeting this week. A CDV is expected within the next 6 months.

* 1. IEC 60214-1 Ed.2.0 - Tap changers - Part 1: Performance requirements and test methods

Mr. Kraemer reported that there were no negative votes on the CDV. As such there will be no FDIS and the draft was approved for publication.

* 1. IEC 60214-2 Ed. 1.0 (2004-10-14): Tap-changers - Part 2: Application guide

No current maintenance activity for this standard. There was further discussion concerning incorporating the IEEE guide for life testing into the appendix.

* 1. PNW 14-752/14-753/14-754: Future IEC 60076-XX-1 Power transformer and reactor fittings-protective devices, Future IEC 60076-XX-2 Power transformer and reactor cooling equipment, and Future IEC 60076-XX-3 Power transformer and reactor cooling equipment

This work was approved. It was noted that there is a shortage of experts for the AHG 1 working group assigned to these projects.

* 1. IEC 61378-2 Ed. 2.0: Convertor transformers - Part 3: Application Guide

A CDV was just issued. It has a closing date of 12/6/13.

1. OTHER ISSUES

The following new work was decided during the TC14 meeting

* 1. IEC 61378-2: Converter transformers-Part 3: Application guide

This could occur with IEEE as a joint document revision. A new convenor for the WG was requested. There will be a subsequent call for experts within the next few weeks

* 1. IEC 60076-4: Power transformers- Part 4: Guide to the lightning impulse and switching impulse testing

There will be a subsequent call for experts within the next few weeks.

* 1. IEC 60076-11: Power transformers- Part 11: Dry-type transformers

It was noted that Casey Ballard from ABB has requested to be the US expert for this project.

* 1. IEC 60076-5: Power transformers- Part 5: Ability to withstand short circuit

It was mentioned that a WG convenor is needed. It was noted that Vinay Mehrotra from SPX has requested to be the WG convenor for this project. Work is expected to start in 2015. It was agreed that the IEEE C57.142 standard should be circulated for possible consideration as a dual logo project.

It was mentioned that the next TC14 plenary meeting will occur in conjunction with the General IEC 2014 meetings in Tokyo, Japan

1. NEW BUSINESS

 There was no new business

###### 9. DATE AND PLACE OF THE NEXT MEETING

The next in person meeting is expected to occur during the 2014 IEEE Fall Conference during the week of March 23rd-27th in Savannah Georgia. The meeting was adjourned at 8:36AM.

Reported by: Steve Griffith, October 29th, 2013