



MINUTES

MEETING NAME USTAG TC14

MEETING PLACE Hyatt Regency Columbus Hotel
Columbus, OH
Meeting Room: Fairfield

DATE & TIME Wednesday, October 30, 2019, 7:00 AM - 8:30 AM US ET

PRESIDING OFFICERS Technical Advisor: Phil Hopkinson

<u>MEMBERS</u>	Burns & McDonnell	Eric Davis
	Cargill	Kevin Rapp
	DuPont Protection Solutions	Robert Ballard
	DuPont Protection Technologies	Richard Marek
	Eaton	Craig Colopy
	Eaton's Cooper Power Systems	Daniel Sauer
	EMS International Consulting, Inc.	Mahesh Sampat
	Ergon	Edward Casserly
	HVOLT Inc.	Philip Hopkinson
	MVA Diagnostics	Scott Reed
	Niagara Transformer Corporation	Sheldon Kennedy
	PDI	Vijay Tendulkar
	Qualitrol LLC	Emilio Morales Cruz
	SPX Transformer Solutions, Inc.	Dharam Vir
	Weidmann Electrical Technology Inc.	Kevin Biggie

<u>OTHERS</u>	FISO Technologies	Gilles Bargone
	Virginia Transformer	John John
	Quality Switch	Dan Swartz
	ABB, Inc.	Joseph Tedesco
	ABB Canada	Ed teNyenhuis
	Foldi & Associates	Joseph Foldi

Midel, M&I Materials UK
Reinhausen, Germany
EFACEC Transformers
EFACEC Transformers
SPX Transformers
PDI
ERGON
TCSI

Attila Gyore
Axel Kraemer
Ricardo Castro Lopes
Marcio Quintela
Vinay Mehrotra
Aniruddha Narawane
Juan Costa
Onome Avanoma

MEMBERS

ABSENT

ABB Inc.
Doble Engineering Company
Doble Engineering Company
Hubbell Acme
Hubbell Acme
Phenix Technologies
Powerohm Resistors, Inc.
PowerWright Technologies
Quality Switch, Inc.
SMIT Transformers
Weidmann Electrical Technology Inc.
Consultant

David Geibel
Matthew Kennedy
Mario Locarno
Ken Pagenkopf
Bruce Schram
Jeff Britton
Thomas Yingling
Hamid Sharifnia
Larry Dix
Sanjay Patel
Thomas Prevost
Raj Ahuja

NEMA STAFF

Gerard Winstanley

1 CALL TO ORDER AND REVIEW OF NEMA MEETING GUIDELINES

The meeting was called to order.

2 ROLL CALL/QUORUM

A roll call was conducted and a quorum confirmed.

3 MINUTES

The minutes of the March 27, 2019 meeting were approved as submitted.

4 REVIEW AND APPROVE AGENDA

The agenda was approved as submitted.

5 MEMBERS UPDATE

Please submit any roster changes to staff.

6 IEC TC 14 2019 plenary meeting Fontainebleau, France

IEC TC 14 meet in Fontainebleau, France on September 18-19, 2019. There was also a joint meeting with IEC TC10 on September 17, 2019. Mr. Hopkinson reported on the meeting.



14_1031e_RM.pdf

6.1 Dual Logo Documents

- Available dual logo documents: 6
 - IEC/IEEE 60076-16 Wind turbine transformers
 - IEC 60076-21 – IEEE Std. C57.15 Step voltage regulators
 - IEC/IEEE 60076-57-1202 Phase shifting transformers
 - IEC 62032 – IEEE C57.135 Guide for Phase shifting transformers
 - IEC/IEEE 60076-57-129 HVDC Transformers
 - IEC/IEEE 60214-2 Tap changer application guide
- Dual logo documents in development / agreed to develop: 2
 - IEC/IEEE 63253-5713-8 Service station voltage transformers (SSVT)
 - IEC/IEEE 60214-1 Tap changer performance requirements (2021)
- Potential subjects for dual logo documents in near and far future
 - Tank rupture mitigation, Submersible transformers, Neutral grounding devices, ...???

6.2 Revisions in progress

- IEC 60076-1 General
 - Convener Paul Jarman, UK
 - Third meeting held in September
- IEC 60076-2 Temperature rise
 - Convener Dejan Susa, NO
 - Second meeting held in September
- IEC 60076-4 Guide to LI and SI testing
 - Convener Thang Hochanh, CA
 - First CD to be published before end 2019

- IEC 60076-5 Ability to withstand short circuit
 - Convener Jean-Christophe Riboud, FR
 - Major revision – 10 meetings held so far.
 - First CD expected in 2020
- IEC 60076-6 Reactors
 - Convener Rob Verhoeven, NL
 - First CD expected in 2020
- IEC 60076-19 Uncertainties in Loss Measurement
 - Project put on hold due to unexpected retirement of convener
 - Project re-start scheduled for 2020

6.3 New Documents

- IEC TS 60076-24 Voltage Regulating Distribution transformers (VRDT)
 - Convener Michel Heinz, GER
 - CDV published and voting closed
 - Publication in 2020
- **IEC 60076-25 Neutral Grounding Resistors**
 - Convener Hakam El Assad, FR
 - First CD recently published – commenting will close Dec 13th

6.4 IEC 60076-22-x Transformer and Reactor Fittings

- | | |
|---|------------------------------|
| • -22-1 Protective devices | published |
| • -22-2 Radiators | published |
| • -22-3 Liquid to air coolers | published |
| • -22-4 Liquid o water coolers | published |
| • -22-5 Pumps | CDV published |
| • -22-6 Fans | CDV published |
| • -22-7 Accessories and fittings | FDIS to be published in Nov. |
| • -22-8 Electronic monitoring equipment | NP to file |

6.5 Ad Hoc Group 36 - Coordination of thermal requirements in existing standards

- Convener: Rick Marek, US
- Task: Develop a new structure for future IEC TC14 thermal standards
- Consider entire material in existing standards plus latest developments and industry interests (high and low temperature, different types of liquid)
- Report presented during plenary meeting in September
- Revisions/developments of future IEC thermal standards will follow AHG 36 recommendation
- Proposal: Better coordination of thermal evaluation of materials with IEEE – However project for Dual Logo document C57.100 / C57.154 was not approved by IEEE.

7 Working Documents

The attached table shows the documents issued by TC14 since the plenary meeting in March 2019.



IEC%20TC14%20Wo
rking%20Document:

8 US Delegates to Working Groups & MTs

The Us Delegates to TC14 Working Groups and Maintenance teams are given below. Please contact the Technical Advisor or Secretary if you are interested in participating in any of these WGs or MTs.

Group	Title	US Delegate
Working Groups		
WG 32	Power transformers and reactor fittings	Emilio Morales
WG 33	Suppression devices of DC magnetic bias of electric power transformers	
WG 34	Voltage Regulating Distribution Transformers (VRDT)	Craig Colopy
Maintenance Teams		
MT 60076-1	Power transformers - Part 1: General	Robert Casey Ballard Richard Marek Thomas Prevost
MT 60076-2	Temperature rise for liquid-immersed transformers	Richard Marek Thomas Prevost

MT 60076-3	Power transformers – Part 3: Insulation levels, dielectric tests and external clearances in air	
MT 60076-4	Power transformers - Part 4: Guide to the lightning impulse and switching impulse testing - Power transformers and reactors	
MT 60076-5	Ability to withstand short circuit	Sanjay Patel
MT 60076-6	Reactors	
MT 60076-7	Loading guide for oil-immersed power transformers	Richard Marek
MT 60076-10	Power transformers - Part 10: Determination of sound levels	
MT 60076-11	Power transformers - Part 11: Dry-type transformers	Robert Casey Ballard Vijay Tendulkar Richard Marek
MT 60076-14	Liquid-immersed power transformers using high-temperature insulation materials	
MT 60076-15	Power transformers - Gas-filled power transformer	
MT 60076-16	Transformers for wind turbine applications	Kevin Rapp Robert Casey Ballard Richard Marek
MT 60076-19	Power transformers - Part 19: Rules for the determination of uncertainties in the measurement of losses in power transformers and reactors	
MT 60076-21	Power transformers - Part 21: Standard requirements, terminology, and test code for step-voltage regulators	Dan Sauer
MT 60076-57-129	Power transformers - Part 57-129: HVDC converter transformers	
MT 60214	Tap changers	Larry Dix David Geibel Craig Colopy
MT 61378-3	Converter transformers - Part 3: Application guide	Richard Marek
Project Teams		
PT 60076-20	Energy efficiency	
PT 60076-25	Power transformers - Part 25: Neutral grounding resistors - General design requirements and test procedures	Thomas Yingling
PT 60076-57-1202	Liquid Immersed Phase Shifting Transformers	Raj Ahuja Sanjay Patel
Ad-Hoc Groups		
ahG 35	The functional classification of power transformers	
Joint Maintenance Teams		
JMT 5	Maintenance Team for revision of IEC 62199 Bushings for DC application and IEC 60137 Bushings above 1kV. Managed by SC 36A	
Joint Ad-Hoc Groups		
JADG 7	Transformer Bushing dimensional standardization Managed by SC 36A	

9 OTHER BUSINESS

Members discussed Impulse testing and the implications of grounding the terminals during the test will have on reflected waves. It was noted that CIGRE have a working group on impulse testing.

10 DATE AND TIME OF NEXT MEETINGS

The next meeting will be in Charlotte NC in Spring 2020.

11 ADJOURNMENT

The meeting was adjourned at 8.15 am EST

<u>NEMALINK CODE</u>	IEC-TC-14-TAG
<u>SUBMITTED BY</u>	Winstanley, Gerard
<u>SUBMITTED ON</u>	October 31, 2019
<u>LEGAL APPROVAL</u>	CRS, October 31, 2019.
<u>UPLOAD LOCATION</u>	Enter upload location.

12