



# MINUTES

**MEETING NAME** USNC TAG on IEC TC 14

**MEETING PLACE** Westin at Crown Center, Kansas City

**DATE & TIME** Wednesday, October 25, 2023, 7:00 AM CDT

**PRESIDING  
OFFICERS** Tom Prevost

<b><u>Present</u></b>	ABB Inc.	teNyenhuis, Ed
	Boettger Transformer Consulting LLC	Boettger, William
	Burns & McDonnell	Davis, Eric
	Burns & McDonnell	Tanaka, Troy
	Cargill	McShane, Charles
	Patrick	
	COGENT Power Inc	Johnstone, Ted
	Doble Engineering Company	Britton, Jeff
	Doble Engineering Company	Locarno, Mario
	DuPont Protection Solutions	Ballard, Robert
	Eaton	Narawane, Aniruddha
	EATON Corporation	Tendulkar, Vijay
	Eaton's Cooper Power Systems	Sauer, Daniel
	FISO Technologies, Inc	Bargone, Gilles
	Hitachi Energy USA Inc.	Arteaga, Javier
	Hitachi Energy USA Inc.	Tedesco, Joseph
	Hitachi Energy USA Inc.	Tillery, John
	Hitachi, Japan	Shirasaka, Yukiyasu
	Hubbell Industrial Controls, Inc.	Kielgas, Bruce
	HVOLT Inc.	Hopkinson, Philip
	Niagara Power Transformer	Kennedy, Sheldon
	Pdicorp	Tendulkar, Vijay
	Phenix Technologies	Britton, Jeff
	Powerohm Resistors a division of Hubbell Industrial Controls, Inc.	

PowerWright Technologies  
 Prolec GE  
 Qualitrol LLC  
 Quality Switch, Inc.  
 Self  
 SPX Corporation  
 Virginia Transformer Corporation  
 Weidmann Electrical Technology Inc.  
 Weidmann Electrical Technology Inc.

Yingling, Thomas  
 Sharifnia, Hamid  
 Dharam, Vir  
 Morales Cruz, Emilio  
 Dix, Larry  
 Colopy, Craig  
 Vir, Dharam  
 John, John  
 Biggie, Kevin  
 Prevost, Thomas  
 Ahuja, Raj

**OTHERS**

Hitachi Energy

teNyenhuis, Ed

**MEMBERS**

**ABSENT**

ABB Incorporated  
 Ergon  
 Cargill  
 Doble Engineering Company  
 EMS International Consulting, Inc.  
 Hubbell Acme  
 MVA Diagnostics  
 Foldi & Associates, Inc.  
 SMIT Transformers

Geibel, David  
 Ahuja, Raj  
 Rapp, Kevin  
 Kennedy, Matthew  
 Sampat, Mahesh  
 Schram, Bruce  
 Reed, Scott  
 Foldi, Joseph  
 Patel, Sanjay

**NEMA STAFF**

Paul Orr

**Others Present (Guests):**

Jennie Aldenlid      Hitachi Energy  
 Baptiste Bousset      Transformers Protector Company  
 Solomon Chiang      The Gund Company  
 Marcos Czernorucki Hitachi Energy  
 Ismail Guner Hydro Quebec  
 Niklas Gustavasson Hitachi Energy  
 Bill Whitehead      Hasson  
 Saramma Hoffman PPLWEB Electric Utilities  
 Stacey Kessler      Utilities Engineers  
 Aleksandr Levin      Weidmann Electrical Technology  
 Tim-Flex Mai      Siemens Energy

Masta Munoz	Hitachi Energy
Tim Raymond	EPRI
Stephen Rehkophf	Rainhausen Germany
Lina Sandsten	Hitachi Energy
Masoud Sharie	Siemens mesa Renewable Energy
Stefan Sihindle	Maschinenfabrik Reinhausen
Dave Stankes	3M
Evanne Wang	DuPont

## 1 CALL TO ORDER AND REVIEW OF NEMA MEETING GUIDELINES

The meeting was called to order. The [Guidelines for Conducting NEMA Meetings](#) governed this meeting.

## 2 ROLL CALL/QUORUM

A roll call was conducted, and a quorum confirmed.

## 3 MINUTES

A motion was made, seconded, and carried to approve the Spring 2023 meeting minutes from the Milwaukee meeting.



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## 4 REVIEW AND APPROVE AGENDA

A motion was made, seconded, and carried to approve the agenda.

## 5 US TAG on IEC TC 14 MEMBERSHIP UPDATE



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Updates - Dharham Vir noted his email is has changed and Craig Colopy noted he is retired from Eaton.

All US residents are invited to join the TAG. Those interested should submit a CV and explain their material interest in participating on the TAG. The TC 14 TAG will review

and ballot candidate members for approval. There is a USNC fee paid to ANSI of \$335 annually. Chair Prevost and Secretary Orr encouraged attendees interested to join as US active participation strengthens US positions and ability to have a voice in the various working group activities. Please contact Paul Orr or Tom Prevost if interested. Bill Whitehead is interested.

## 6 REVIEW of IEC TC 14 ACTIVITIES

Business items to be discussed:

USTAG TC 14 Chair, Tom Prevost, reviewed the activities of IEC TC14 with input from IEC TC14 Chair, Christoph Ploetner.



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TC14%20Report%20t

There are 40 active documents with 9 revisions in progress, including:

- 60076-1: General (equivalent to C57.12.00 and .01). Major revision, specifically of thermal requirements. Include insulation system with thermally upgraded paper. More than 1000 comments received on CD recently.
- 60076-2: Temperature Rise New title will be *“Thermal performance measurements and test procedures for liquid-immersed transformers”*. CD circulated in parallel with IEC 60076-1. More than 700 comments received on CD.
- 60076-4: Guide to LI and SI testing
- 60076-5: Ability to Withstand Short Circuit. This is a major revision. First CD received 550 comments. Resolution and CD2 preparation ongoing. CD2 expected mid 2024.
- 60076-6: Reactors
- 60076-9: Terminal and Tapping Markings
- 60076-18: Measurement of Frequency Response. Revision work has started. Intention is to harmonize with IEEE C57.149
- 60076-19: Uncertainties in Loss Measurements.
- WG C57.135 Guide for Phase Shifting Transformers IEEE C57.135 will be merged with IEC 62032 into IEC/IEEE 60076-57-135 (a dual-logo document). New title will be, *“Technical guideline for the Application, Specification, and Testing of Phase-Shifting Transformers”*
- IEC/IEEE 60076-57-129 HVDC Converter Transformers New revision just started
- IEC 60076-26 Functional Requirements of Insulating Liquids for use in Power Transformers

## **IEC/IEEE Dual Logo Documents**

- Four Documents have been published:
  - a) **IEC/IEEE 60076-16:2018 ED2**, Power transformers - Part 16: Transformers for wind turbine applications  
MT 60076-16 Convenor Tom Breckinridge  
Stability Date 2025
  - b) **IEC/IEEE 60076-57-1202:2017 ED1**, Power transformers - Part 57-1202: Liquid immersed phase-shifting transformers
  - c) **IEC/IEEE 60076-57-129:2017 ED1**, Power transformers - Part 57-129: Transformers for HVDC applications  
MT 60076-57-129 Convenor Mats Berglund  
Stability Date 2025
  - d) **IEC/IEEE 60214-2:2019 ED2**, Tap-changers - Part 2: Application guidelines  
MT 60214 Convenor Axel Kraemer  
Stability Date 2026
- 1 document in development , IEC/IEEE 60076-57-135, Guide for Phase Shifting Transformers
- 1 Document in revisión, IEC/IEEE 60076-57-129 Transformers for HVDC Applications
- 1 document in consideration Standard Requirements for Load Tap Changers

## **7 OTHER BUSINESS**

No other business was discussed.

## **8 DATE AND TIME OF NEXT MEETINGS**

The next TC 14TAG meeting is scheduled for: Spring 2024 is the week of March 10-14 (Vancouver) in conjunction with IEEE Transformers Committee meeting.

Date: Wed. March 13 2024, Vancouver, Canada

Time: 7am-8am

**NEMALINK CODE**

IEC-TC-14-TAG

**SUBMITTED BY**

Orr, Paul

**SUBMITTED ON**

Enter submission date.

**LEGAL APPROVAL**

Enter approval date.

**UPLOAD LOCATION**

Enter upload location.