IEEE PC37.09 Working Group
Draft Meeting Minutes
April 8, 2025 – 10:15 am
Meeting Minutes Recorded by: Chris Jarnigan

1. Call to Order
The meeting was called to order at 10:15 am by the Working Group Chair, Jan Weisker.

2. Establishment of Quorum
This is the initial meeting of the working group. All members requesting voting membership were asked to raise their hand. A total of 82 people requested voting membership.

3. Roll call and Disclosure of Affiliation
Attendees present stated their name and affiliation. The quorum was met since voting membership was just established and all were present. A list of attendees (name, affiliation, and voting status) is attached.

4. IEEE SA Patent Policy: Call for Patents
The call for patents was issued; none were raised.

5. IEEE SA Copyright Policy / IEEE Participant Behavior
The IEEE SA Copyright Policy slides and the Participant Behavior slides were presented.

6. Approval of the Agenda
The agenda was presented.

7. Technical Presentations or Discussions
a. The project was introduced to the working group. The current standard does not have ANSI accreditation. The plan is to go to ballot with the current standard. The corrigendum and amendment will be included by the working group in the recirculation period. Once the document is in ballot, no other standard would be able to claim the ANSI accreditation. John Webb presented the reasoning to pursue this course of action.
b. The PAR was presented to the working group. NesCom requested an edit to the title which was presented to the working group.
c. Intended changes to the document were presented to the working group.
    i. Move Annex F from C37.04 to C37.09

ii. Unification of requirements for unit testing and single-phase testing of a three-pole circuit breaker – Nadia Hasnaoui and Andreas Bartels volunteered to assist Jan Weisker with this task.
iii. Insignificant time delay for L90 instead of SLF – Jan discussed the ITRV requirement in the standard. It should read that it is only required for L90.
iv. Measurement of temperature – Leslie Falkingham discussed whether damaging/drilling to measure the hottest spot is correct which was introduced in 09a. John Webb shared with the working group why this was introduced in 09a. Without drilling, it is difficult to accurately measure the hot spot. The intent was only to apply to the type test not conformance test. Neil McCord asked if the "hottest spot" was new language in 09a or if it was pre-existing. Ted Burse shared that the hottest spot came from the online dictionary. The online definition indicates that it is the surface instead of drilling into the conductor. A request was made for a task force to study this requirement. John Webb, Leslie Falkingham, Mauricio Aristizabal, Terry Woodyard, Jeff Door, Jacob Walgenbach, Justin Rebovich, Robert Hanna, Matthew Cuppett, Mike Crawford, Tony Ricciuti, and Damian Podgorski volunteered to work on the issue. John Webb will lead the task force.
v. Remove 4.10 Capacitance current switching tests and refer to C37.100.2 – Neil McCord shared the C37.100.2 is willing for C37.09 to do this. There was a question whether there are differences in the requirements. The intent is to incorporate the differences in .09 into 100.2 during the current revision, so they are the same. A question was raised why not bring C37.100.2 into C37.09. C37.100.2 is the standard for all capacitive switching requirements.
vi. Rated operating sequence for short-line fault (SLF). It was commented by Anne Bosma that SLF should be tested with rated operating sequence instead of three single breaking operations. Further supporting material is expected to be presented to the working group. IEC 62271-100 applies rated operating sequence.
vii. Include references to any additional impedance or device during dielectric tests – Sergiy Rogozkhin presented the proposal for the revision; there was discussion in the work group regarding this topic.
viii. How 50 Hz temperature rise test can cover 60 Hz – There was discussion in the work group regarding this topic. One question was rather geometry affects this method. A comment was made that since the 60 Hz test is harder, it should be required to qualify for 60 Hz equipment. The working group decided to put this proposal on hold until more information can be gathered to support this proposal.
ix. Introduce testing tolerances – There was discussion among the working group. A comment was made to include the direction the requirements to ensure the minimum value is required by the test. A request was made for task force volunteers to study this issue. Victor Savulyak (send group to Victor), Terry Woodyard, Federico Di Michele,

Kai Jacob, Albane Bornuat, Eduardo Henriet, Sergio Miranda, Jesus Avila volunteered for the task force. Victor will lead the task force.

8. Project Schedule

The schedule and timeline were presented to the working group.

9. Future Working Group Meetings

October 2025 in Reno, NV

10. A motion was made to move the existing C37.09 standard to ballot.

Motion: John Webb

2nd: Leslie Falkingham

Motion carried by unanimous consent

11. Adjourn

The agenda was completed, and the meeting was adjourned at 11:50 am.

Annex:

- Agenda incl. meeting presentation
- Attendance

PC37.09 Standard Test Procedure for AC High-Voltage Circuit Breakers with Rated Maximum Voltage above 1000V

Chair: Jan Weisker
Secretary: Chris Jarnigan

IEEE Switchgear Committee Meeting, April 08, 2025 – Orlando/FL

Introduction & Membership

Chair: Jan Weisker

Secretary: Chris Jarnigan

Voting Members

Apply for membership by indication on the roster

xx Members (xx Votes → Quorum = xx)

Agenda

- Welcome/Call to order
- Introductions and Declaration of Affiliation
  Affiliation FAQs: http://standards.ieee.org/faqs/affiliation.html
- IEEE SA Patent Policy: Call for Patents
  https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf
- IEEE SA Copyright Policy:
  https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/copyright-policy-WG-meetings.potx
- Introduction of Project
- PAR Review
- Work to be done
- Time Schedule
- Vote on moving forward to Ballot
- Adjourn the Meeting

Approval of the agenda

~~Motion to approve….~~

IEEE SA COPYRIGHT POLICY

By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.

- Previously Published material (copyright assertion indicated) shall not be presented/submitted to the Working Group nor incorporated into a Working Group draft unless permission is granted.
- Prior to presentation or submission, you shall notify the Working Group Chair of previously Published material and should assist the Chair in obtaining copyright permission acceptable to IEEE SA.
- For material that is not previously Published, IEEE is automatically granted a license to use any material that is presented or submitted.

IEEE SA COPYRIGHT POLICY

- The IEEE SA Copyright Policy is described in the IEEE SA Standards Board Bylaws and IEEE SA Standards Board Operations Manual
  - IEEE SA Copyright Policy, see
    Clause 7 of the IEEE SA Standards Board Bylaws
    https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7
    Clause 6.1 of the IEEE SA Standards Board Operations Manual
    https://standards.ieee.org/about/policies/opman/sect6.html
- IEEE SA Copyright Permission
  - https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/permissionltrs.zip
- IEEE SA Copyright FAQs
  - https://standards.ieee.org/faqs/copyrights/
- IEEE SA Best Practices for IEEE Standards Development

http://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/best_practices_for_ieee_standards_development_051215.pdf

- Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)
  - https://standards.ieee.org/about/policies/opman/sect6.html

PARTICIPANTS HAVE A DUTY TO INFORM THE IEEE

- Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents

- Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims

Early identification of holders of potential Essential Patent Claims is encouraged

WAYS TO INFORM IEEE

- **Cause an LOA to be submitted to the IEEE SA (patcom@ieee.org); or**
- **Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or**
- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

OTHER GUIDELINES FOR IEEE WORKING GROUP MEETINGS

- **All IEEE SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
      - **Technical considerations remain the primary focus.**
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed. Formally object to the discussion immediately.**

For more details, see *IEEE SA Standards Board Operations Manual*, clause 5.3.10 and *Antitrust and Competition Policy: What You Need to Know* at http://standards.ieee.org/develop/policies/antitrust.pdf

PATENT-RELATED INFORMATION

The patent policy and the procedures used to execute that policy are documented in the:

- ***IEEE SA Standards Board Bylaws***
  (http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)
- ***IEEE SA Standards Board Operations Manual***
  (http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)

Material about the patent policy is available at
http://standards.ieee.org/about/sasb/patcom/materials.html

If you have questions, contact the IEEE SA Standards Board Patent Committee Administrator at patcom@ieee.org

Introduction of Project

- Project was set up to attain ANSI approval
- Update Title of standard, see PAR
- Take word file of C37.09 – 2018, do MEC and form ballot group
- Go to ballot

During re-circulation period:

- Incorporate Cor1 (2021) and Amd1 (to be published)
- Do revision work
- Clean up references and bibliography

PAR Review

IEEE SA STANDARDS ASSOCIATION

IEEE

IEEE PES Power & Energy Society®

IEEE

PC37.09

Type of Project: Revision to IEEE Standard C37.09-2018
Project Request Type: Initiation / Revision
PAR Request Date: 17 Oct 2024
PAR Approval Date: 11 Dec 2024
PAR Expiration Date: 31 Dec 2028
PAR Status: Active
Root Project: C37.09-2018

1.1 Project Number: PC37.09
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Project Title: Standard for Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V
Change to Title: ~~IEEE~~ Standard for Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V

3.1 Working Group: C37.09 - Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V(PE/SWG/HVCB/C37.09)
3.1.1 Contact Information for Working Group Chair:
Name: Jan Weisker
Email Address: jan.weisker@siemens-energy.com
3.1.2 Contact Information for Working Group Vice Chair:
None
3.2 Society and Committee: IEEE Power and Energy Society/Switchgear(PE/SWG)
3.2.1 Contact Information for Standards Committee Chair:
Name: Donald Swing
Email Address: d.swing@ieee.org
3.2.2 Contact Information for Standards Committee Vice Chair:
Name: John Webb
Email Address: jcwebb@ieee.org
3.2.3 Contact Information for Standards Representative:
Name: Keith Flowers
Email Address: keith.flowers@ieee.org

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Dec 2026
4.3 Projected Completion Date for Submittal to RevCom: Dec 2028

5.1 Approximate number of people expected to be actively involved in the development of this project: 30
5.2 Scope of proposed standard: This standard applies to alternating current (ac) high-voltage circuit breakers with rated maximum voltage above 1000 V. It defines various tests that are made on ac high-voltage circuit breakers, except for generator circuit breakers, which are covered in IEC/IEEE 62271-37-013:2015. It specifies the tests and describes the accepted methods used to verify assigned ratings defined in IEEE Std C37.04. It also describes the test procedures associated with production and field installation. The test procedures are divided into the following classifications: a) Design tests; b) Production tests; c) Conformance tests; d) Field tests. NOTE--Design tests are referred to as "Type" tests, and Production tests are referred to as "Routine" tests in IEC standards.
Change to scope of proposed standard: This standard applies to alternating current (ac) high-voltage circuit breakers with rated maximum voltage above 1000 V. It defines various tests that are made on ac high-voltage circuit breakers, except for generator circuit breakers, which are covered in IEC/IEEE 62271-37-013:2015~~ (formerly IEEE Std C37.013(TM)-1997)~~. It specifies the tests and describes the accepted methods used to verify assigned ratings defined in IEEE Std C37.04~~ (TM). 4~~ It also describes the test procedures associated with production and field installation. The test procedures are divided into the following classifications: a) Design tests; b) Production tests; c) Conformance tests; d) Field tests. NOTE--Design tests are referred to as "Type" tests, and Production tests are referred to as "Routine" tests in IEC standards.

Intended Improvements

Move Annex F from C37.04 to C37.09

- Annex F gives a testing procedure and no rating
- Introduce as new Annex in .09 as it is
- Check for proper reference to it

Intended Improvements

Unification of requirements for unit testing and single-phase testing of a three-pole circuit-breaker

Several occurrences of unit testing

4.8.3.5 Method III, unit tests

4.8.2.9 Conditions during single-pole tests and unit tests

Several occurrences of single-pole testing

4.8.3.3 Method II, single-phase tests

4.8.2.9 Conditions during single-pole tests and unit tests

Intended Improvements

Insignificant time delay for L90 instead of line side time delay + ITRV

Clarify, insignificant time delay for L90 only, not “SLF”

Note that it is considered that the combination of short-line fault (SLF) (with the standard time delay) plus initial transient recovery voltage (ITRV) is equivalent to a test of SLF performed with a line, without time delay (<0.1 μs).

Intended Improvements

4.4.5 Measurement of temperature

Jan,

I'm preparing for the Spring Switchgear meeting in Orlando.

My apologies, I've not been active in C37.09 recently due to injury and workload. I understand that C37.09a has been out for ballot this year, and unfortunately I missed the call and did not join the ballot pool

I have a number of serious concerns over the proposed changes to clause 4.4.5 Measurement of temperature.

How would you propose that we deal with this? Is it too late for me to raise these in Orlando?

Regards

Leslie

Intended Improvements

4.4.5 Measurement of temperatures

Temperatures shall be measured by any of the following methods:

— Thermocouple

— Thermometer (allowed method only for ambient temperature measurements; not acceptable for temperature measurement of current-carrying components)

— Resistance (preferred method for measuring coil temperatures)

The measuring device shall be located at a point where measurement of the hottest spot can be made even though this may involve drilling holes that destroy some parts. It is recognized that measuring devices cannot be located in the actual contact point of line or point contacts without destroying the effectiveness of such line or point contacts. Measurements shall be made at junction points of insulation and conducting parts and at contacts and connections of conductors.

NOTE 1—Because there is no required order in which design tests must be performed nor on the number of test samples which may be used in a complete series of design tests, drilling holes that destroy some parts is acceptable. For example, damaging the dielectric integrity of the test sample to place a measuring device at an otherwise inaccessible contact or connection does not justify excluding such measurement points from the continuous current design test. Contacts in a vacuum have no maximum temperature rise limit and therefore drilling into a vacuum interrupter is not required. Contacts and connections in reactive gases, in non-reactive gases and oil have a maximum permissible temperature rise limit. Therefore, it might be necessary to damage such an interrupting assembly to place the measuring device as close as possible to actual contact or connection.

NOTE 2—Conformance tests might require that all the tests be performed on a single representative test sample. If drilling holes that destroy some parts for placement of measuring devices in certain locations would impact the performance of the test sample during subsequent tests, then such locations may be considered inaccessible.

Intended Improvements

Remove 4.10 Capacitance current switching tests and refer to C37.100.2

C37.09 should reference to C37.100.2.
New revision of C37.100.2 is not yet published.

Remove cap switching content from C37.09?
Yes / No / Postpone

Intended Improvements

Rated operating sequence for short-line fault

Introduce rating operating sequence O-t-CO-t'-CO instead of 3 x O

(Comment on Amendment 1 from Anne Bosma)

Intended Improvements

Include reference to any additional impedance or device during dielectric tests

Current limiting or damping resistors as well as overvoltage protection devices can be utilized during preliminary impulse tests. It is proposed to include information about such devices in the text otherwise they are not allowed. Change all three similar entries 4.5.6, 4.5.7, 4.8.6.7.

Proposed text

When testing switchgear incorporating an open vacuum interrupter, for each polarity, a maximum of 25 preliminary impulse tests may be performed at up to and including the rated withstand voltage. The number and level of preliminary impulses as well as additional equipment (if any) such as current limiting or damping resistors and overvoltage protection devices is to be stated by the manufacturer. Breakdowns that are observed during these preliminary tests shall be disregarded for the purposes of the withstand statistics used to determine the pass or fail performance of the equipment.

Intended Improvements

How 50 Hz temperature rise test can cover 60 Hz

The text in h) considers that test at 60 Hz is valid for 50 Hz and not vice versa. IEC 62271-1, 7.5.3.1 allows to test at 50 Hz and consider 60 Hz as a valid test under the condition that the recorded temperature rise values are not exceed 95% of the maximum permissible values.

Proposed text

h) Tests demonstrating current-carrying ability shall be made at rated power frequency. When both power frequencies 50 and 60 Hz are rated, the test at 50 Hz is valid for 60 Hz provided the recorded temperature rise values do not exceed 95% of the maximum permissible values, the test at 60 Hz is valid for 50Hz.

Chairman's remark:
Mention that no ferromagnetic material shall be in the vicinity
Is the 95 % related to the ΔK criteria?

Intended Improvements

Introduce testing tolerances

Tabled or in main text
Set up a task group – volunteers?

Schedule PC37.09

- First meeting, April 8, 2025, Orlando/FL
- Get permission to go to ballot
- Form Ballot pool and send draft to MEC
- After initial ballot do revision work
- Get word file with Cor1 and Amd1 incorporated (supported by IEEE SA editors)
- Get proposals for improvements and incorporate them
- Form CRG and empower for comment resolution in second meeting
- Second meeting, October xx, 2025, Reno/NV
- Finalization in 2028

(PAR expires December 31, 2028)

Initiation of SA Ballot process

Vote of the working group to go to ballot

Adjourn the Meeting

Back-up

IEEE Standards Association Governance Meetings Schedule

2025

JANUARY

29: NesCom and RevCom teleconferences

FEBRUARY

12-17: IEEE BOD meeting series, Bellevue, WA, USA

24-28: BOG meeting week, Beijing, China

MARCH

24-28: SASB meeting series week, Seoul, South Korea

APRIL

07-11: CAG meeting week, Kuala Lumpur, Malaysia

MAY

07: NesCom and RevCom teleconferences

19-23: BOG meeting week, Brussels, Belgium

JUNE

16-20: SASB meeting series week, Vienna, Austria

25-30: IEEE BOD meeting series, Chicago, IL, USA

JULY

14-18: CAG meeting week, Munich, Germany

AUGUST

SEPTEMBER

08-10: SASB meeting series, virtual-only

OCTOBER

22: NesCom and RevCom teleconferences

NOVEMBER

19-24: IEEE BOD meeting series, New York, NY, USA

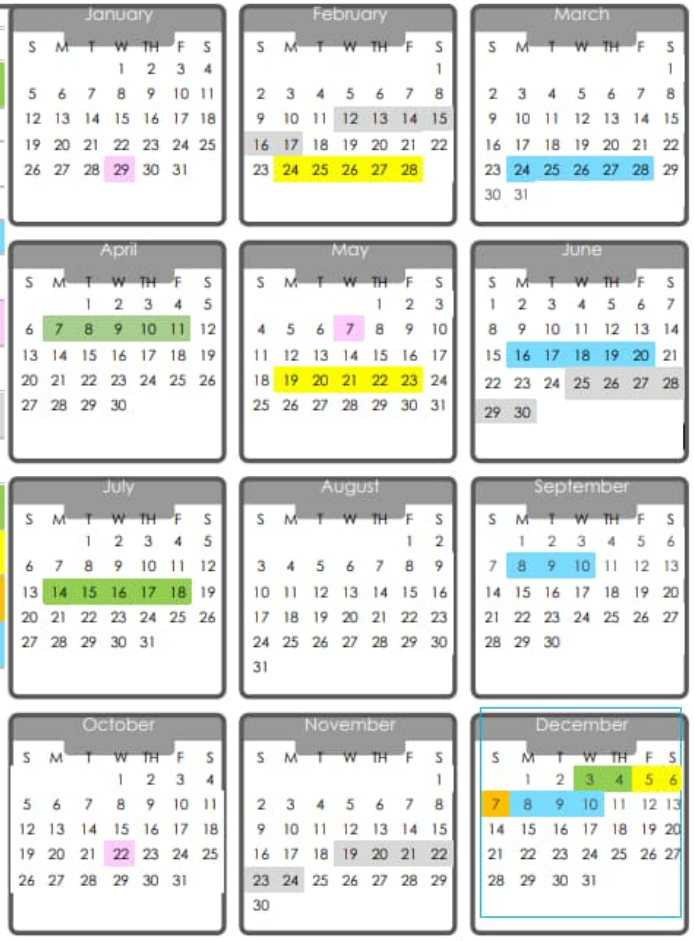
DECEMBER

03-04: CAG meeting, Jersey City, New Jersey, USA

05-06: BOG meeting, Jersey City, New Jersey, USA

07: IEEE SA Awards Ceremony, Jersey City, New Jersey, USA

08-10: SASB meeting series, Jersey City, New Jersey, USA



NesCom/RevCom Submittal Deadlines:
20 December 2024 (for January 2025 mtgs)
14 February 2025 (for March 2025 mtgs)
28 March 2025 (for May 2025 mtgs)
09 May 2025 (for June 2025 mtgs)
31 July 2025 (for September 2025 mtgs)
12 September 2025 (for October 2025 mtgs)
20 October 2025 (for December 2025 mtgs)

OSCom meeting schedule:
https://opensource.ieee.org/oscom/meetings

16 August 2024

Role	First Name	Last Name	Company Name	S25
Chair	Jan	Weisker	Siemens Energy	x
Secretary	Christopher	Jarnigan	Southern Company	x
Voting member	Mauricio	Aristizabal	Hitachi Energy	x
Voting member	Jesus Manuel	Avila	ABB Mexico	x
Voting member	Ganesh	Balasubramanian	Eaton	x
Voting member	Andreas	Bartels	Powell Industries	x
Voting member	George	Becker	Power Engineers Inc.	x
Voting member	Zachary	Beecher	Power Grid Components	x
Voting member	Dan	Benedict	PPL	x
Voting member	Sanket	Bolar	Oncor	x
Voting member	Albane	Bornuat	GE Grid Solutions	x
Voting member	Arjan	Bronsveld	Hitachi Energy	x
Voting member	Craig	Bryant	Duke Energy	x
Voting member	Arben	Bufi	Meiden America	x
Voting member	Ted	Burse	Powell Industries, Inc.	x
Voting member	Sudarshan	Byreddy	Burns & McDonell	x
Voting member	Jared	Cantu	OMICRON Electronics	x
Voting member	Steven	Chen	Eaton Corporation	x
Voting member	Andrew	Chovanec	Power Grid Components	x
Voting member	Michael	Christian	ABB	x
Voting member	Lucas	Collette	Duquesne Light Co.	x
Voting member	Michael	Crawford	Mitsubishi Electric	x
Voting member	Jason	Cunningham	Southern States, LLC	x
Voting member	Matthew	Cuppett	Hitachi Energy	x
Voting member	Federico	Di Michele	CESI SpA	x
Voting member	Jeffrey	Door	H-J	x
Voting member	Max	Eastman	Black & Veatch	x
Voting member	Leslie	Falkingham	VIL	x
Voting member	Sergio	Flores	Schneider Electric US, Inc.	x
Voting member	Paul	Fox	Schneider Electric	x
Voting member	Sathish	Govindarajan	Schneider Electric	x
Voting member	Paul	Grein	Group CBS	x
Voting member	Robert	Hanna	JST Power Equipment	x
Voting member	Nadia	Hasnaoui	GE	x
Voting member	Eduardo	Henriet	Siemens Energy	x
Voting member	Jeremy	Hensberger	Mitsubishi Electric	EA
Voting member	Victor	Hermosillo	GE Grid Solutions	x
Voting member	Jennifer	Hunter	MEPPI	x
Voting member	Kai	Jacob	Siemens AG	x
Voting member	Thomas	Keels	kEElectric Engineering,	x

Voting member	Seth	Kravetz	Qualus	x
Voting member	Carl	Kurinko	Hitachi Energy	x
Voting member	Brad	Leccia	Eaton	x
Voting member	Yong Woo	Lee	KERI	x
Voting member	Mia	Lei	HICO America	x
Voting member	Albert	Livshitz	Qualus Services	x
Voting member	Vincent	Marshall	Southern Company	x
Voting member	Peter	Marzec	S&C Electric	x
Voting member	Neil	McCord	KEC Precision LLC	x
Voting member	Mcpharlen	Mgunda	HICO America	x
Voting member	Sergio	Miranda	ABB Mexico	x
Voting member	Fernando	Ordein	Dominion Energy	x
Voting member	Miklos	Orosz	Circuit Breaker	x
Voting member	Sumitabha	Pal	Schneider Electric	x
Voting member	Lalit	Patil	Eaton	x
Voting member	Conrad	Pecile	Myers Power Products	x
Voting member	Damian	Podgorski	Sargent & Lundy	x
Voting member	Craig	Polchinski	Mitsubishi Electric Power	x
Voting member	Isaac	Pounders	Meiden	x
Voting member	Javier	Ratmiroff	GE Vernova	x
Voting member	Justin	Rebovich	GE Grid Solutions	x
Voting member	Samala Santosh	Reddy	Powell Industries	
Voting member	Aaron	Rexroad	Meiden	x
Voting member	Tony	Ricciuti	EATON	x
Voting member	Sergiy	Rogozkhin	Tavrida Electric GmBH	x
Voting member	Victor	Savulyak	KEMA	x
Voting member	Daniel	Schiffbauer	Toshiba International	x
Voting member	Jeffrey	Scott	Ameren	x
Voting member	Michael	Skidmore	AEP	x
Voting member	John	Tarleton	Southern States	x
Voting member	Timothy	Terry	Meiden America	x
Voting member	Jey	Thayalan	Schneider Electric	x
Voting member	Vernon	Toups	Siemens Energy Inc	x
Voting member	Jacob	Walgenbach	Siemens	x
Voting member	John	Webb	ABB	x
Voting member	Casey	Weeks	Siemens Energy, Inc.	x
Voting member	Dan	Wolfe	Pennsylvania Switchgear	x
Voting member	Terry	Woodyard	Siemens Industry, Inc.	x
Voting member	Richard	York	Mitsubishi Electric	x
Voting member	Marcus	Young	Mitsubishi Electric	x
Voting member	Mina	Youssef	Eaton Corporation	x
Voting member	Samuel	Zaharko	MEPPI	x
Voting member	Jim	Zhong	ATC	x
Non-voting member	Vincent	Balvet	Vizitax	x

Non-voting member	Paul	Barnhart	UL Solutions	x
Non-voting member	Jeff	Brodgon	Georgia Transmssion	x
Non-voting member	Derek	Hughes	Georgia Transmssion	x
Non-voting member	Sudesh	Jaggernauth	Florida Power & Light	x
Non-voting member	Seyoung	Ju	HICO America	x
Non-voting member	Michael	Lee	PG&E	x
Non-voting member	Leo	Lopez	WIKA Instrument	x
Non-voting member	Paul	Masterson	Meiden America	x
Non-voting member	Anne	Miller	TCI	x
Non-voting member	David	Mitchell	Southern States	x
Non-voting member	Anthony	Natale	HICO	x
Non-voting member	Mike	Nolte	Kiewit	x
Non-voting member	Urmil	Parilch	Hitachi Energy	x
Non-voting member	Brian	Roberts	Southern States	x
Non-voting member	Jo	Seyngrae	KERI	x
Non-voting member	Devki	Sharma	Self affiliated	x
Non-voting member	Dave	Shechu	HICO America	x
Non-voting member	Josh	Sizemore	WIKA Instrument	x
Non-voting member	Dragavs	Tabakovic	Hubbel	x
Non-voting member	Joseph	Usner	AEP	x
Non-voting member	Marc	Vittoz	GE Vernova	x
Non-voting member	Jason	Williams	JST Power Equipment	x