

Welcome/Call to Order

Jan Weisker called the meeting to order at 8:00 am.
The agenda was presented.

Introductions & Membership

The attendees introduced themselves along with their affiliation.

34 members out of 59 were present for the meeting which met the quorum requirements. There were 71 people present in the meeting.

Approval of Agenda

Motion to approve – Andreas Bartels
2nd – Mike Skidmore

The agenda was approved by unanimous consent.

Mandatory Information

IEEE Copyright slide was presented.

The essential patent claim slide was presented. No essential patent claims were voiced during the call.

Other Guidelines slide was presented.

Approval of Minutes of last Meeting (Oklahoma City Fall 2024 meeting)

Motion to approve – Henning Milnikel
2nd – Frederico Di Michele

The minutes were approved by unanimous consent.

Approval of Minutes of last Meeting Virtual (Virtual meeting January 17, 2025)

Motion to approve – Neil McCord
2nd – Mike Skidmore

The minutes were approved by unanimous consent.

Project Status

Jan provided a status update for the amendment reporting the initial ballot, first recirculation 1, and the second recirculation.

The ballot passed the second recirculation without comment.

The draft has been sent to RevCom.

Jan thanked the working group members and the comment resolution group for their contribution to the amendment.

Neil McCord thanked Jan for all his work on the amendment, and the members showed their agreement with applause.

Adjourn the Meeting

The agenda was completed, and the meeting was adjourned at 8:18 am

Minutes recorded by:

Chris Jarnigan

Annexes:

- Agenda incl. meeting presentation
- Attendance



PC37.09a Standard Test Procedure for AC High-Voltage Circuit Breakers with Rated Maximum Voltage above 1000V - Amendment 1

Chair: Jan Weisker
Secretary: Chris Jarnigan

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

Introduction & Membership

Chair: Jan Weisker

Koustubh	Ashtekar
Ganesh	Balasubramanian
Herman	Bannink
Andreas	Bartels
Bob	Behl
Dan	Benedict
Craig	Bryant
Arben	Bufi
Stephen	Cary
Steven	Chen
Andrew	Chovanec
Michael	Christian
Lucas	Collette
Michael	Crawford
Federico	Di Michele
Sergio	Flores
Robert	Hanna
Jeremy	Hensberger (excused)
Victor	Hermosillo

Voting Members

Jennifer	Hunter
Todd	Irwin
Thomas	Keels
Dwight	Krause
Carl	Kurinko
Chang Hoon	Lee
Yong Woo	Lee
Vincent	Marshall
Paul	Masterson
Steven	May
Neil	Mc Cord
Henning	Milnikel
Fernando	Ordein
Sumitabha	Pal
Lalit	Patil
Isaac	Pounders
Aaron	Rexroad
Anthony	Ricciuti

Secretary: Chris Jarnigan

Ryan	Rowe
Leonel	Santos
Victor	Savulyak
Ben	Sax
Carl	Schuetz
Jeffrey	Scott
Devki	Sharma
Michael	Skidmore
Donald	Steigerwalt
Vernon	Toups
Jacob	Walgenbach
John	Webb
Casey	Weeks
Dan	Wolfe
Terry	Woodyard
Richard	York
Marcus	Young
Mina	Youssef
Li	Yu
Samuel	Zaharko

57 Members (59 Votes → Quorum = 30)

Agenda (approval needed)

- Welcome/Call to order
- Introductions and Declaration of Affiliation
Affiliation FAQs: <http://standards.ieee.org/faqs/affiliation.html>
- Approval of the Agenda
- 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>
- Approval of Minutes of last Virtual Meeting and F24 Meeting
- Status of Project
- Time Schedule
- 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**

Approval of MoM

Oklahoma Meeting 10/14/24

C37.09a meeting minutes

Oklahoma City, OK

October 14, 2024

Welcome/Call to Order

Jan Weisker called the meeting to order at 1:30 pm.

Agenda was presented

Introductions & Membership

The attendees introduced themselves along with their affiliation.

41 members out of 59 were present for the meeting which met the quorum requirements. There were 87 people present in the meeting.

Approval of Agenda

Motion to approve – Andreas Bartels

2nd – John Webb

Mandatory Information

IEEE Copyright slide was presented.

The essential patent claim slide was presented. No essential patent claims were voiced during the call.

Other Guidelines slide was presented.

Approval of Minutes of last Meeting (May 30, 2024 virtual meeting)

Motion to approve – Vincent Marshall

2nd – John Webb

The minutes were approved by unanimous consent.

Approval of MoM

Virtual Meeting 01/17/25

Date has been corrected.

C37.09a meeting minutes

Virtual meeting

January 17, 2024

Welcome/Call to Order

Jan Weisker called the meeting to order at 9:04 am CST.

Introductions & Membership

The attendees introduced themselves along with their affiliation.

20 members out of 59 voting members were present for the meeting, which did not meet the quorum requirement. There were 36 people present in the meeting.

Agenda

The agenda was reviewed.

Mandatory Information

IEEE Copyright slide was presented. The essential patent claim slide was presented. No essential patent claims were voiced during the call. The meeting guidelines slide was presented.

Project Status

Project status update was provided. The approval rate of the initial ballot was 88%. 229 total comments were received. The comment resolution group has met 3 times to resolve the comments. A separate group met to resolve low and high temperature test requirements.

All comments have been reviewed and resolved.

The red line version of the revised draft was presented for review by the working group.

Arjan Bronsveld raised a concern over the average arcing time in the service capability. It was not clear how an additional test affected the calculation of the average arcing time.

A sentence was added to define that the arcing times of all performed tests are added and divided by the required number of tests (six or eight).

Time Schedule

The time schedule was presented.

The recirculation ballot will be sent out after this meeting.

Adjourn the Meeting

The agenda was completed and the meeting was adjourned at 9:43 am CST.

Recorded by:

Chris Jarnigan

Annexes:

- Agenda
- Attendance

Project Status PC37.09 Amd1

- First Meeting, April 12, 2022, Orlando/FL
- Second Meeting, October 18, 2022, Burlington/VT
- Third Meeting, April 18, 2023, Clearwater/FL
- Forth Meeting, October 10, 2023, San Diego/CA
- Fifth Meeting, March 12, 2024, Virtual
- Sixth Meeting, April 2, 2024, Fort Lauderdale, FL
- Seventh Meeting, April 30, 2024, Virtual
- Eighth Meeting, October 14, 2024, Oklahoma City/OK
- Ninth Meeting, January 17, 2025, Virtual

Project Status PC37.09 Amd1

Initial Ballot

- Initial Ballot
08/05/24 to 09/04/24
- CRG formed by e-mail

Chris Jarnigan	Utility
Mike Crawford	Manufacturer
Ted Burse	Manufacturer
John Webb	Manufacturer
Dave Mitchell	Consultant
Dan Schiffbauer	Manufacturer
Dan Benedict	Utility

- CRG met virtually:
 - 10/01/24
 - 10/07/24
 - 11/25/24
- TF Low and high temp test met virtually:
 - 12/04/24

Ballot Group Members 111

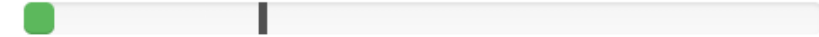
Minimum should be 10

Return Ballots: (89) 80%



Minimum return rate is 75%

Abstentions: (4) 4%



Abstentions must be below 30%

Approval Rate: 88%



Approval rate must be at least 75%

Votes counted in approval rate:

Approve	74
Disapprove With MBS	10
Comment(s)	
Total	84

Votes not counted in approval rate:

Disapprove Without MBS	1
Comment(s)	
Abstentions	4
Total	5

Total Votes: 89

Total Comments: 229

Project Status PC37.09 Amd1

Re-circulation 1

- Recirculation 1
01/30/25 to 02/13/25
- 11 technical comments
- CRG met virtually:
 1. 03/11/25

Ballot Group Members 111

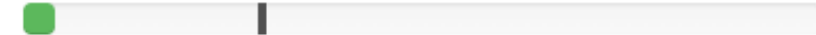
Minimum should be 10

Return Ballots: (95) 85%



Minimum return rate is 75%

Abstentions: (4) 4%



Abstentions must be below 30%

Approval Rate: 96%



Approval rate must be at least 75%

Votes counted in approval rate:

Approve	88
Disapprove With MBS	3
Comment(s)	
Total	91

Votes not counted in approval rate:

Disapprove Without MBS	0
Comment(s)	
Abstentions	4
Total	4

Total Votes: 95

Total Comments: 49

Project Status PC37.09 Amd1

Re-circulation 2

- Recirculation 2
03/24/25 to 04/03/25
- No further comments

Ballot Group Members 111

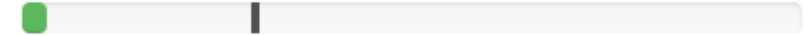
Minimum should be 10

Return Ballots: (97) 87%



Minimum return rate is 75%

Abstentions: (3) 3%



Abstentions must be below 30%

Approval Rate: 100%



Approval rate must be at least 75%

Votes counted in approval rate:

Approve	94
Disapprove With MBS	0
Comment(s)	
Total	94

Votes not counted in approval rate:

Disapprove Without MBS	0
Comment(s)	
Abstentions	3
Total	3

Total Votes: 97

Total Comments: 0

Schedule PC37.09 Amd1

- First meeting, April 12, 2022, Orlando/FL
- Second meeting, October 18, 2022, Burlington/VT
- Third Meeting, April 18, 2023, Clearwater/FL
- Forth Meeting, October 10, 2023, San Diego/CA
- Fifth Meeting, March 12, 2024, virtual
- Draft D1.0 prepared
- Sixth Meeting, April 2, 2024, Fort Lauderdale/FL
- Get permission to ballot by WG and HVCB
- Draft D1.1 circulation within the WG – through iMeet Central
- Form ballot group (validity 6 month) after Summer of 2024 – running until June, 20
- After today's meeting, complete Draft D1.x and send to MEC
- Initial Ballot before F'24 meeting, as soon as possible
- Comment resolution by e-mail and virtual group meetings and the F'24 meeting
- Prepare D1.6 and re-circulate
- Comment resolution by e-mail and virtual group meetings
- Prepare D1.7 and re-circulate
- Send Draft D1.7 to RevCom by March 28 for May 7 meeting – done!
- Finalization in 2025
- Dissolve WG PC37.09a during F'25 meeting

(PAR expires December 31, 2025)

WG PC37.09a

Acknowledgement

- Thank you for contributions and fruitful discussions to all active members
- Special thanks to the CRG

Adjourn the Meeting



Back-up

IEEE Standards Association Governance Meetings Schedule

2025



JANUARY	JULY	January	February	March
29: NesCom and RevCom teleconferences	14-18: CAG meeting week, Munich, Germany	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
FEBRUARY	AUGUST	April	May	June
12-17: IEEE BOD meeting series, Bellevue, WA, USA		S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
24-28: BOG meeting week, Beijing, China	SEPTEMBER	July	August	September
MARCH	08-10: SASB meeting series, virtual-only	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
24-28: SASB meeting series week, Seoul, South Korea	OCTOBER	October	November	December
APRIL	22: NesCom and RevCom teleconferences	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
07-11: CAG meeting week, Kuala Lumpur, Malaysia	NOVEMBER	November	December	
MAY	19-24: IEEE BOD meeting series, New York, NY, USA	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	
07: NesCom and RevCom teleconferences	DECEMBER	December		
19-23: BOG meeting week, Brussels, Belgium	03-04: CAG meeting, Jersey City, New Jersey, USA	S M T W TH F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31		
JUNE	05-06: BOG meeting, Jersey City, New Jersey, USA			
16-20: SASB meeting series week, Vienna, Austria	07: IEEE SA Awards Ceremony, Jersey City, New Jersey, USA			
25-30: IEEE BOD meeting series, Chicago, IL, 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	S22	F22	S23	F23	3/24/24	S24	5/30/24	F24	1/17/2025	S25
Chair	Jan	Weisker	Siemens Energy	x	x	x	x	x	x	x	x	x	x
Secretary	Christopher	Jarrigan	Southern Company	x	x	x	x	x	x	x	x	x	x
Voting member	Koustubh	Ashtekar	Siemens Industry, Inc.	x	x	x	x				x		x
Voting member	Ganesh	Balasubramanian	Eaton			x		x	x			x	
Voting member	Herman	Bannink	G&W Electric	x	x	x		x	x			x	
Voting member	Andreas	Bartels	Powell Industries			x	x	x	x	x	x	x	x
Voting member	Bob	Behl	JST POWER EQUIPMENT			x			x				
Voting member	Dan	Benedict	PPL				x	x	x	x	x	x	x
Voting member	Craig	Bryant	Duke Energy		x	x		x	x	x			x
Voting member	Arben	Bufl	Meiden America	x	x	x	x		x				x
Voting member	Stephen	Cary	2 Phase Solutions	x		x	x						
Voting member	Steven	Chen	Eaton Corporation	x	x	x	x	x	x	x	x		x
Voting member	Andrew	Chovanec	Power Grid Components	x	x	x	x	x	x	x	x	x	x
Voting member	Michael	Christian	ABB	x	x	x	x		x	x	x		x
Voting member	Lucas	Collette	Duquesne Light Co.	x	x	x	x	x	x	x	x		
Voting member	Michael	Crawford	Mitsubishi Electric	x	x	x	x		x	x		x	x
Voting member	Federico	Di Michele	CESI SpA		x	x		x				x	x
Voting member	Sergio	Flores	Schneider Electric US, Inc.	x	x	x	x		x		x		
Voting member	Robert	Hanna	JST Power Equipment	x	x		x			x	x		x
Voting member	Jeremy	Hensberger	Mitsubishi Electric	x	x	x	x		x		x	x	
Voting member	Victor	Hermosillo	GE Grid Solutions		x		x		x	x	x	x	x
Voting member	Jennifer	Hunter	MEPPI		x	x	x		x	x	x		x
Voting member	Todd	Irwin	GE Grid Solutions	x		x			x				
Voting member	Thomas	Keels	kEElectric Engineering,	x	x		x		x		x		
Voting member	Dwight	Krause	Black & Veatch			x			x		x		
Voting member	Carl	Kurinko	Hitachi Energy	x	x	x	x	x	x		x	x	x
Voting member	Chang Hoon	Lee	HYOSUNG	x	x	x	x		x		x		
Voting member	Yong Woo	Lee	KERI			x	x		x		x		x
Voting member	Vincent	Marshall	Southern Company	x	x	x	x	x	x	x	x		x
Voting member	Paul	Masterson	Meiden America	x		x	x		x				
Voting member	Steven	May	Southern Company		x	x	x	x	x	x	x		
Voting member	Neil	McCord	KEC Precision LLC	x	x	x	x		x	x	x		x
Voting member	Henning	Milnikel	Siemens AG				x	x	x			x	x
Voting member	Fernando	Ordein	Dominion Energy			x			x	x	x		x
Voting member	Sumitabha	Pal	Schneider Electric	x	x	x	x	x	x		x		
Voting member	Lalit	Patil	Eaton			x	x		x		x	x	x
Voting member	Isaac	Pounders	Meiden			x	x		x		x		x
Voting member	Aaron	Rexroad	Meiden			x	x		x				x
Voting member	Anthony	Ricciuti	EATON	x	x	x	x	x	x	x	x		x
Voting member	Ryan	Rowe	TCI			x			x		x		
Voting member	Leonel	Santos	Schneider Electric	x		x	x	x	x				x
Voting member	Victor	Savulyak	KEMA	x	x	x	x			x	x		x
Voting member	Ben	Sax	Nashville Electric Service			x			x		x		
Voting member	Carl	Schuetz	ATC	x	x	x	x	x	x		x	x	
Voting member	Jeffrey	Scott	Ameren	x	x	x	x		x				x
Voting member	Devki	Sharma	Self affiliated	x		x			x				
Voting member	Michael	Skidmore	AEP	x	x	x			x		x		x
Voting member	Donald	Steigerwalt	Duke Energy		x	x	x	x		x	x	x	
Voting member	Vernon	Toups	Siemens Energy Inc	x	x	x	x	x	x		x		x
Voting member	Jacob	Walgenbach	Siemens	x	x	x	x	x	x	x		x	
Voting member	John	Webb	ABB	x	x	x	x	x	x	x	x	x	
Voting member	Casey	Weeks	Siemens Energy, Inc.	x	x	x	x		x	x	x	x	x
Voting member	Dan	Wolfe	MEPPI		x	x	x	x	x	x	x	x	x
Voting member	Terry	Woodyard	Siemens Industry, Inc.	x	x	x	x	x		x			
Voting member	Richard	York	Mitsubishi Electric	x	x	x	x		x		x		
Voting member	Marcus	Young	Mitsubishi Electric		x	x	x		x		x		
Voting member	Mina	Youssef	Eaton Corporation		x		x		x	x	x		x
Voting member	Li	Yu	EATON		x	x			x				
Voting member	Samuel	Zaharko	MEPPI	x	x	x			x	x	x		x
Non-voting member	Anatoly	Akhunov	HICO			x	x		x		x		
Non-voting member	Brian	Alexander	S&C Electric						x				
Non-voting member	Samuel	Andris	KEMA Labs		x	x	x						
Non-voting member	Michelle	Antantis	Duquesne Light						x				
Non-voting member	Mauricio	Aristizabal	Hitachi Energy		x	x	x	x		x	EA	x	x
Non-voting member	Jesus Manuel	Avila	ABB Mexico						x				
Non-voting member	Vincent	Balvet	Vizitax										x
Non-voting member	Eloy	Banda	Siemens Energy								x		
Non-voting member	Andy	Beckel	Xcel Energy			x	x						
Non-voting member	George	Becker	Power Engineers Inc.		x	x	x						x
Non-voting member	Zachary	Beecher	Power Grid Components						x	x	x	x	
Non-voting member	Brian	Berner	Power Grid Components				x	x			x		
Non-voting member	Sanket	Bolar	Oncor				x		x		x		
Non-voting member	Albane	Bornuat	GE Grid Solutions						x		x	x	x

Non-voting member	Nick	Bouche	Switchgear Power Solutions								X		
Non-voting member	Elizabeth	Bray	Southern Company	x									
Non-voting member	Jeff	Brodgon	Georgia Transmssion			x			x				x
Non-voting member	Arjan	Bronsveld	Hitachi Energy						x		x	x	x
Non-voting member	Adam	Brooks	Duke Energy			x	x	x			x		
Non-voting member	John	Brunke	Power Engineers	x									
Non-voting member	Ted	Burse	Powell Industries, Inc.		x			x			x	x	
Non-voting member	Sudarshan	Byreddy	Burns & McDonell				x						x
Non-voting member	Ping	Cai	Sieyuan Electric								x		
Non-voting member	Jared	Cantu	OMICRON Electronics								x		
Non-voting member	Dave	Collette	Mitsubishi Electric			x			x				
Non-voting member	Ivan	Contreras	ABB				x						
Non-voting member	Jason	Cunningham	Southern States, LLC	x	x	x			x		x		x
Non-voting member	Matthew	Cuppett	Hitachi Energy						x		x	x	x
Non-voting member	David	Dart	NOJA Power						x				
Non-voting member	Henry	De Villiers	Arizona Public Service								x		
Non-voting member	Patrick	DI Lillo	Consolidated Edison Co.	x	x		x						
Non-voting member	Lissy	Diaz	FPL						x		x		
Non-voting member	Jeff	Door	H-J			x			x		x		
Non-voting member	Max	Eastman	Black & Veatch			x			x				x
Non-voting member	Leslie	Falkingham	VIL			x					x		
Non-voting member	Bruce	Fennell	Nashville Electric Service	x									
Non-voting member	Andrew	Fernandes	Trayer				x			x			
Non-voting member	Peter	Glaesman	PCORE Electric Company		x								
Non-voting member	Mauricio	Gonzalez	Avangrid				x						
Non-voting member	Sathish	Govindarajan	Schneider Electric								x		
Non-voting member	John	Harley	First Power Group								x		
Non-voting member	Oliver	Hartmann	Siemens Energy Inc						x				x
Non-voting member	Nadia	HASNAOUI	GE		x								
Non-voting member	Christian	Heinrich	Siemens AG								x		
Non-voting member	Eduardo	Henriet	Siemens Energy								x	x	x
Non-voting member	Benjamin	Hohnstadt	DTE	x									
Non-voting member	Zinan	Huang	Sieyuan Electric								x		x
Non-voting member	Roy	Hutchins	Georgia Power Company	x	x								
Non-voting member	Bharatwaj	Jagadeesan	Southern States LLC	x									
Non-voting member	Shah	Jamal	Avangrid								x	x	
Non-voting member	Darin	Jensen	Meiden American		x		x						
Non-voting member	Dave	Johnson	Self affiliated			x							
Non-voting member	Hyoungjin	Joo	Hyundai Electric & Energy		x								
Non-voting member	Jeff	Jordan	Southern States				x						
Non-voting member	Seyoung	Ju	HICO America										x
Non-voting member	Jacob	Kai	Siemens AG									x	x
Non-voting member	Blair	Kerr	G&W Electric						x				
Non-voting member	SangTae	Kim	HICO America		x	x	x						
Non-voting member	Yun Seong	Kim	KERI			x			x				
Non-voting member	Ramaprasad	Lakshminarayana	Doble Engineering Co								x		
Non-voting member	Brad	Leccia	Eaton								x		x
Non-voting member	Mia	Lei	HICO America										x
Non-voting member	Hua Ying	Liu	Southern California Edison							x			
Non-voting member	Linda	Liu	Sieyuan Electric						x				
Non-voting member	Adrian	Lopez	Powell Industries		x				x		x		
Non-voting member	Leo	Lopez	WIKA Instrument	x	x	x	x		x		x	x	x
Non-voting member	Chunming	Ma	Burns & McDonell				x				x	x	
Non-voting member	Jesse	Markham	ECI								x		
Non-voting member	Peter	Marzec	S&C Electric	x							x		x
Non-voting member	Kevin	McGlowen	JST Power Equipment	x									
Non-voting member	Kenneth	McKinney	Underwriters		x								
Non-voting member	Gary	Meekins	Southern States						x		x		
Non-voting member	Anne	Miller	TCI								x		x
Non-voting member	Sergio	Miranda	ABB Mexico						x				
Non-voting member	David	Mitchell	Southern States	x	x	x		x	x	x	x	x	x
Non-voting member	Andrew	Monroe	Southern Company	x									
Non-voting member	Stephanie	Montoya	MKI				x						
Non-voting member	Anthony	Natale	HICO				x		x				
Non-voting member	Raj	Nayar	Siemens	x		x							
Non-voting member	Miklos	Orosz	Circuit Breaker	x	x				x				x
Non-voting member	John	Owen	Powertech Labs			x				x			
Non-voting member	Mirko	Palazzo	Hitachi Energy										x
Non-voting member	Sharan	Parikh	Duke Energy						x				
Non-voting member	Urmil	Pascitch	Hitachi Energy										x
Non-voting member	Mark	Pattison	H-J			x			x		x		
Non-voting member	Conrad	Pecile	Myers Power Products				x			x			x
Non-voting member	Thomas	Pellerito	DTE ENERGY	x									
Non-voting member	Mark	Peterson	Xcel Energy			x							
Non-voting member	Craig	Polchinski	Mitsubishi Electric Power	x					x	x			x
Non-voting member	Rakesh	Ranjan	Esgee Technologies Inc.	x									
Non-voting member	Justin	Rebovich	GE Grid Solutions						x		x		x
Non-voting member	Frank	Richter	50 Hz Transmission				x				x		

[illegible]