

High Voltage Circuit Breaker Subcommittee
Meeting Minutes
Thursday, October 9, 2025 – 10:15 am
Peppermill Resort in Reno, NV – Naples 7 room
Meeting Minutes Recorded by: Chris Jarnigan

1. Call to Order

The meeting was called to order at 10:15 am by the Subcommittee Chair, Dan Schiffbauer.

2. Roll call and Disclosure of Affiliation

Attendees present stated their name and affiliation. A list of attendees (name, affiliation, and voting status) is attached.

3. Establishment of Quorum

29 voting members were needed to establish a quorum. 44 of 62 voting members were present. Quorum was met. 84 total attendees were present.

4. Approval of the Agenda

Motion to approve the meeting agenda.

Mover: Jeff Ward

Second: Jan Weisker

The agenda was unanimously approved as presented without objection.

5. Approval of Spring 2025 meeting minutes

Motion to approve the minutes from Spring 2025 HVCB Subcommittee meeting.

Mover: Michael Christian

Second: Lucas Collette

The Spring 2025 meeting minutes were unanimously approved without objection.

6. IEEE SA Patent Policy: Call for Patents

The call for patents was issued; **none raised.**

7. IEEE SA Copyright Policy

The IEEE SA Copyright Policy slides were distributed to participants prior to the meeting.

8. IEEE Participant Behavior

The IEEE Participant Behavior slides were distributed to participants prior to the meeting.

9. Chairman's report

Chair requested the working group chairs upload the working group minutes to iMeet Central not later than Friday, October 24.

Add Jennifer Santulli to roster in iMeet Central.

October 20 is the last day to submit to REVCOM and NESCOM to be included in their last 2025 meeting.

C3706.1 is being consolidated into C37.04 as part of the current C37.04 revision

Luke Collette has volunteered to chair a PAR study group for C37.011 which will meet in Spring 26. Please see Luke for any questions or input.

The Subcommittee is forming a chopped wave study group. A presentation was presented to the subcommittee showing the objective and group members.

Chris Jarnigan (lead)
Arben Bufi
Luke Collette
Victor Hermosillo
Carl Kurinko
Hua Liu
Carl Schuetz
Jan Weisker
Rich York

10. New Business

a. PC37.01 Standard for HVDC Circuit Breakers above 3200 VDC

Chair: Steven Chen

Secretary: Carl Schuetz

The working group met on Monday 10/6 in two sessions. There were a total of 27 participants. Quorum was not met. They will hold online meetings to address issues. The working group addressed the comments that needed the most discussion.

b. PC37.04 Standard for Ratings and Requirements for AC High Voltage Circuit Breakers with Rated Maximum Voltage above 1000 V

Chair: John Webb

Secretary: Dan Benedict

The working group met on 10/7 with two sessions and did have quorum. Documents are being placed in iMeet Central. Copy Dan Benedict in addition to John Webb when making requests.

C37.04a has completed their work. Andy Keels motioned and Dan Benedict seconded the motion to disband the working group. The motion passed by unanimous consent.

- c. PC37.06.1 Recommended Practice for Preferred Ratings for High-Voltage (>1000 volts) AC Circuit Breakers Designated Definite Purpose for Fast Transient Recovery Voltage Rise Times

Chair: Dan Schiffbauer

Secretary: Dan Benedict

The working group met on Monday 10/6. The ballot concluded successfully with 100% approval and two comments that will be handled by REVCOM.

- d. PC37.09 IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis

Chair: Jan Weisker

Secretary: Chris Jarnigan

The working group met on Tuesday 10/7. There was a total of 118 people in attendance. 62 of 84 voting members were present which met quorum. Initial ballot went out and received many comments. The working group has formed a comment resolution group that is empowered to act on behalf of the working group.

Jan requested that HVCB disband the C37.09a working group. Andy Keels motioned and Carl Schuetz seconded the motion to disband the working group. The motion passed by unanimous consent.

- e. PC37.010

Chair: Andy Keels

Secretary: Jeremy Hensberger

The working group met with 57 participants present. They met quorum. They reviewed the findings of the IBR task force. They anticipate having a draft by the April meeting. A 2-year PAR extension request has been submitted.

- f. PC37.015

Chair: Mike Crawford

Secretary: Lucas Collette

Met Thursday morning and had quorum. PAR expires in December 2027. They will host a winter meeting and intend to vote to go to ballot.

Motion: Pending working group approval; submit to MEC and form a ballot pool.

Motion John Webb

Second David Mitchell

The motion passed by unanimous consent.

g. PC37.016

Chair: Neil McCord

Secretary: Lucas Collette

The working group has held virtual meetings since the Spring meetings and the working group meeting this week. They have a draft revision ready to submit to MEC.

Motion: Submit IEEE PC37.016/Draft 2.7 to MEC and form a ballot pool.

Mover: David Mitchell

Second: Carl Scheutz

The motion passed by unanimous consent.

The working group requested a 2-year PAR extension this week.

h. PC37.10

Chair: Todd Irwin

Secretary: Jeff Ward

The working group did not meet this week. The first recirculation ended with 1 comment that was resolved. 10-day recirculation ballot will end October 17.

Motion #1: The PC37.10 working Group motions to HVCB for permission to submit IEEE PC37.10/D5.2 to RevCom

Mover: Carl Schuetz

Second: Andreas Bartels

The motion passed by unanimous consent.

Motion #2: The PC37.10 Work motions to HVCB for permission to request a one-year PAR extension to secure the continuity of the project in case of a delay of RevCom approval of IEEE PC37.10/D5.2

Mover: Jan Weisker

Second: Brian Roberts

The motion passed by unanimous consent.

Note: The PAR extension would be withdrawn if/when RevCom recommends approval of IEEE PC37.10/D5.2.

i. PC37.10.1

Chair: Dave Mitchell

Secretary: Fernando Ordein

The working group had quorum. First ballot closed in September with comments. They formed a committee to review the comments. They will hold two virtual meetings to address the comments.

j. PC37.12

Chair: Todd Irwin

Secretary: Sanket Shetty

The working group met on Monday. Quorum was not met. They discussed adding a section on controlled switching. They discussed whether to include a sample specification. They have decided not to include a sample specification. They will remove references to C37.06.

k. PC37.12.1

Chair: Sam Zaharko

Secretary: Andy Keels

Met on Monday with 30 in attendance. No official votes were taken since quorum was not met. They took suggestions for changes that should be considered.

11. Future Working Group Meetings

The future meetings were shared with the subcommittee.

S26 – Clearwater Beach, FL

F26 – San Diego, CA

S27 – Orlando, FL

F27 – Waikiki Beach, HI

12. Adjourn

The meeting was adjourned at 10:53 pm

Meeting attendance:

Family Name	Given Name	Affiliation	Membership	S25
Alexander	Roy	RWA Engineering	VM	
Aristizabal	Mauricio	Hitachi Energy	VM	X
Ashtekar	Koustubh	Siemens	VM	
Bartels	Andreas	Powell Industries	VM	X
Becker	George	Power Engineers	VM	EA
Bufi	Arben	Meiden America Switchgear, Inc.	VM	X
Caverly	David	Trench Ltd.	VM	
Chen	Steven	Eaton	VM	X
Chovanec	Andrew	Power Grid Components	VM	X
Christian	Michael	ABB	VM	X
Collette	Lucas	Duquesne Light	VM	X
Crawford	Michael	MEPPI	VM	X
Cunningham	Jason	Southern States	VM	X
Di Lillo	Patrick	Consolidated Edison	VM	
Di Michele	Federico	KEMA	VM	X
Door	Jeffrey	The H-J Family of Companies	VM	X
Falkingham	Leslie	Vacuum Interrupters Limited	VM	X

Flores	Sergio	Schneider Electric	VM	X
Hensberger	Jeremy	MEPPI	VM	EA
Hermosillo	Victor	GE Grid Solutions	VM	X
Hu	Jingxuan (Joanne)	RBJ Engineering	VM	EA
Hunter	Jennifer	MEPPI	VM	X
Irwin	Todd	GE Grid Solutions	VM	X
Jarnigan	Christopher	Southern Company	VM	X
Johnson	David	HVCB	VM	
Keels	Thomas (Andy)	Clearway Energy	VM	X
Leccia	Brad	Eaton	VM	X
Livshitz	Albert	Qualus Services	VM	X
Lopez	Adrian	Powell Industries	VM	
Marshall	Vincent	Southern Company	VM	X
May	Steven	Southern Company	VM	
McCord	Neil	KEC Precision	VM	X
Mitchell	Dave	Southern States	VM	X
Palazzo	Mirko	Hitachi Energy	VM	X
Polchinski	Craig	MEPPI	VM	X
Ricciuti	Anthony	Eaton	VM	X
Santos	Leonel	Schneider Electric	VM	X
Schiffbauer	Daniel	Toshiba International Corporation	VM	X
Schuetz	Carl	ATC	VM	EA
Scott	Jeff	Ameren	VM	
Sharma	Devki	Self	VM	X
Skidmore	Michael	AEP	VM	X
Smith	Robert (Kirk)	Retired	VM	
Steigerwalt	Don	Duke Energy	VM	
Toups	Vernon	Siemens Energy	VM	
Trichon	Francois	Schneider Electric	VM	X
Ward	Jeffrey	Self	VM	X
Webb	John	ABB	VM	X
Weeks	Casey	Siemens Energy	VM	X
Weisker	Jan	Siemens Energy	VM	X
Westerdale	Matt	US Bureau of Reclamation	VM	EA
Wolfe	Dan	Pennsylvania Switchgear	VM	X
Woodyard	Terrance	Siemens Industry	VM	X
York	Richard	MEPPI	VM	X
Young	Marcus	MEPPI	VM	X
Akhunov	Anatoly	HICO America	NM	X
Avila	Jesus	ABB	NM	X
Balasubramanian	Ganesh	Eaton	NM	X

Balvet	Vincent	Vizimax	NM	X
Benedict	Dan	Pennsylvania Power and Light (PPL)	NM	X
Bolar	Sanket	Oncor	NM	X
Bornuat	Albane	GE Vernova	NM	X
Bouche	Nick	Switchgear Power Systems	NM	X
Brogdon	Jeffrey	Georgia Transmission	NM	X
Bronsveld	Arjan	Hitachi Energy	NM	X
Byreddy	Sudarshan	Burns & McDonnell	NM	X
Castillo	Pedro	ABB	NM	X
Chhabra	Mohit	S&C Electric	NM	X
Collette	Dave	MEPPI	NM	X
Cuppett	Matthew	Hitachi Energy	NM	X
Dunn	Chris	Dominion Energy	NM	X
Eastman	Maxwell	Black & Veatch	NM	X
Fox	Paul	Schneider Electric	NM	X
French	Chris	Beta Engineering	NM	X
Grenier-Poulin	Renaud	MindCore Technologies	NM	X
Hanna	Robert	JST Power	NM	X
Harley	John	First Power Group, LLC	NM	X
Hartmann	Oliver	Siemens Industry	NM	X
Hasnaoui	Nadia	GE	NM	X
Heinrich	Christian	Siemens AG	NM	X
Henriet	Eduardo	Siemens Energy	NM	X
Hughes	Derek	Georgia Transmission	NM	X
Ivanov	Alex	JST Power	NM	X
Jacob	Kai	Siemens	NM	X
Jaggernaut	Sudesh	Florida Power and Light	NM	X
Ju	Seyoung	HICO America	NM	X
Kravetz	Seth	Qualus Services	NM	X
Kurinko	Carl	Hitachi Energy	NM	X
Lakshminarayana	Ramaprasad	Doble Engineering	NM	X
Lopez	Leo	WIKA Instrument, LP	NM	X
Lovins	Colby	Federal Pacific	NM	X
Lyu	Soung Hwan	Federal Pacific	NM	X
Ma	Chunming	Burns & McDonnell	NM	X
Mgunda	Mcpharlen	HICO America	NM	X
Milnikel	Henning	Siemens	NM	X
Miranda	Sergio	ABB	NM	X
Natale	Anthony	HICO America	NM	X
Nieto	Carlos	S&C Electric	NM	X
Ordein Torres	Fernando	Dominion Energy	NM	X

Orosz	Miklos	CBT&S, Myers Power Products	NM	X
Pal	Sumitabha	Schneider Electric	NM	X
Parikh	Urmil	Hitachi Energy Sweden	NM	X
Patil	Lalit	Eaton	NM	X
Pecile	Conrad	Myers Power Products	NM	X
Peterson	Mark	Xcel Energy	NM	X
Pounders	Isaac	Meiden America Switchgear, Inc.	NM	X
Rebovich	Justin	GE Grid Solutions	NM	X
Reddy	Samala Santosh	Powell Industries	NM	X
Rexroad	Aaron	Meiden America Switchgear, Inc.	NM	X
Roberts	Brian	Southern States	NM	X
Santulli	Jennifer	IEEE SA	NM	X
Sell	Jason	Switchgear Power Systems	NM	X
Shirode	Aniket	ABB	NM	X
Sizemore	Josh	WIKA Instrument, LP	NM	X
Solanki	Lokesh	ABB	NM	X
Tama	Valeria	JST Power	NM	X
Tarleton	John	Southern States	NM	X
Tillery	Tim	Howard Industries	NM	X
Usner	Joseph	AEP	NM	X
Vittoz	Marc	GE Vernova	NM	X
Walgenbach	Jacob	Siemens	NM	X
Youssef	Mina	Eaton	NM	X
Zaharko	Sam	MEPPI	NM	X

NOTE – EA (Excused Absence) does not count against continued membership and does not count toward meeting quorum.

IEEE HVCB Subcommittee Meeting
Agenda
Thursday October 9, 2025, 10:15 AM to 12:00 PM
Peppermill Resort in Reno, NV – Naples 7 room

1. **Call to Order:**

2. **Introductions and Declaration of Affiliation (Working Group Establishment)**

Affiliation FAQs: <http://standards.ieee.org/faqs/affiliation.html>

3. **Establishment of Quorum:**

Alexander, Roy - EA	Di Michele, Federico	McCord, Neil	Smith, Robert (Kirk)
Aristizabal, Mauricio - EA	Door, Jeffrey	Mitchell, Dave	Steigerwalt, Don
Ashtekar, Koustubh	Falkingham, Leslie	Ordein Torres, Fernando	Toups, Vernon
Bartels, Andreas	Flores, Sergio	Pal, Sumitabha	Trichon, Francois
Becker, George	Hensberger, Jeremy	Palazzo, Mirko - EA	Usner, Joseph
Benedict, Dan	Hermosillo, Victor	Peterson, Mark	Ward, Jeffrey
Bolar, Sanket	Hu, Jingxuan (Joanne) - EA	Polchinski, Craig	Webb, John
Bufl, Arben	Hunter, Jennifer	Rexroad, Aaron	Weeks, Casey
Caverly, David	Irwin, Todd - EA	Ricciuti, Anthony	Weisker, Jan
Chen, Steven	Jarnigan, Christopher	Roberts, Brian	Westerdale, Matt
Chovanec, Andrew	Johnson, David	Santos, Leonel	Wolfe, Dan
Christian, Michael	Keels, Thomas (Andy)	Schiffbauer, Daniel	Woodyard, Terrance
Collette, Lucas	Leccia, Brad	Schuetz, Carl	York, Richard
Crawford, Michael	Livshitz, Albert	Scott, Jeff	Young, Marcus
Cunningham, Jason	Lopez, Adrian	Sharma, Devki	
Di Lillo, Patrick	Marshall, Vincent	Skidmore, Michael	

Quorum = 29 today

4. **Approval of Agenda:**

5. **Approval of S25 (4/9/2025) Meeting Minutes:**

[HVCB S25 minutes](#)

6. **IEEE SA Patent Policy: Call for Patents**

<https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>

7. **IEEE SA Copyright Policy:**

See Annex A

8. **IEEE SA Participant Behavior:**

See Annex B

9. **Presentation(s) / Technical Presentation(s), Contribution(s) or Discussion(s)**

a. **Chairman's Report:**

i. Please upload working group meeting minutes to the HVCB imeetcentral site ***no later than Friday, October 24***. Use the templates. Switchgear committee has a preferred filename format for WG minutes, e.g., *F24_HVCB_WG_PC37.06.1_REV00*.

ii. Please add Jennifer Santulli (IEEE PM) to your roster.

iii. October 20 is the last opportunity to submit anything for consideration by NESCOM and REVCOM this year.

iv. Consolidation of 06.1 into 04 as part of the current 04 revision (Luke C.).

v. Luke Collette volunteered to chair a PAR study group for C37.011 which will meet during S26. Anyone interested in joining should see Luke.

vi. Formation of a chopped wave study group.

b. PC37.01 Standard for HVDC Circuit Breakers above 3200

VDC Chair: S. Chen

Secretary: C. Schuetz

Working group update

c. PC37.04 Standard for Ratings and Requirements for AC High Voltage Circuit Breakers with Rated Maximum Voltage above 1000 V

Chair: J. Webb Secretary: D. Benedict

Working group update

d. PC37.06.1 Recommended Practice for Preferred Ratings for High-Voltage (>1000 volts) AC Circuit Breakers Designated Definite Purpose for Fast Transient Recovery Voltage Rise Times

Chair: D. Schiffbauer Secretary: D. Benedict

Report status of (ANSI) revision.

e. PC37.09 IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis

Chair: J. Weisker Secretary: C. Jarnigan

Working group update

f. PC37.010 Application Guide for AC High-Voltage Circuit Breakers > 1000 Vac Rated on a Symmetrical Current Basis

Chair: A. Keels Secretary: L. Collette

Report status of revision – **PAR expires 12/31/2025**.

g. PC37.015 Guide for the Application of Shunt Reactor
Switching Chair: M. Crawford
Secretary: L. Collette
Report status of (ANSI) revision.

h. PC37.016 Standard for AC High-Voltage Circuit Switchers Rated 15.5 kV through 245
kV Chair: N. McCord
Secretary: L. Collette
PAR expires 12/31/2025.

Motion: Submit IEEE PC37.016/Draft 2.7 to MEC and form a ballot pool.

i. PC37.10 Guide for Investigation, Analysis, and Reporting of Power Circuit
Breaker Failures
Chair: T. Irwin Secretary: J. Ward

PAR expires 12/31/2025.

Motion #1: The 37.10 working Group motions to HVCB for permission to submit IEEE PC37.10/D5.2
to RevCom

Motion #2: The 37.10 Work motions to HVCB for permission to request a one year PAR extension to
secure the continuity of the project in case of a delay of RevCom approval of IEEE PC37.10/D5.2

*Note: The PAR extension would be withdrawn if/when RevCom recommends approval of IEEE
PC37.10/D5.2.*

j. PC37.10.1 Guide for the Selection of Monitoring for Circuit
Breakers Chair: D. Mitchell
Secretary: F. Ordein
Report status of (ANSI) revision.

k. PC37.12 Guide for Specifications of High-Voltage Circuit Breakers (over 1000
V) Chair: T. Irwin
Secretary: S. Shetty
Report status of (ANSI) revision.

l. PC37.12.1 Recommended Practice for Instruction Manual Content of AC High-
Voltage Circuit Breakers Above 1000 V
Chair: S. Zaharko Secretary: A. Keels
Report status of (ANSI) revision.

10. **Future Meetings**
S26 - Clearwater Beach, FL F26 – San
Diego, CA

S27 – Orlando, FL
F27 – Waikiki Beach, HI
S28 – San Antonio, TX
F28 – Columbus, OH
S29 – Kansas City, MO
F29 – Salt Lake City, UT

11. **Adjourn**

Annex A

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.
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- 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/sect67.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/ieeestandards/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>

Annex B

Participant behavior in IEEE-SA activities is guided by the IEEE Codes of Ethics & Conduct

- All participants in IEEE-SA activities are expected to adhere to the core principles underlying the:
 - [IEEE Code of Ethics](#)
 - [IEEE Code of Conduct](#)
- The core principles of the IEEE Codes of Ethics & Conduct are to:
 - Uphold the highest standards of integrity, responsible behavior, and ethical and professional conduct
 - Treat people fairly and with respect, to not engage in harassment, discrimination, or retaliation, and to protect people's privacy.
 - Avoid injuring others, their property, reputation, or employment by false or malicious action
- The most recent versions of these Codes are available at <http://www.ieee.org/about/corporate/governance>

HVCB Chopped Wave Study Group

9 October 2025, Reno, NV

Background, purpose and scope

Background/purpose:

In 2024, a subgroup of C37.100.1 reviewed chopped wave and determined that the duty might still have some relevance but not what was originally intended. In other words, the chopped wave duty might be providing cover for other system stresses that exceed full-wave lightning impulse, e.g., high frequency air disconnect pre-arcing. The conclusion was that more study was needed.

Scope:

- Review findings of the 100.1 taskforce
- Study the air DS stress case (and any others) in terms of their severity and probability. *Determine if the CW test adequately demonstrates performance against such stresses or if it should be replaced with an alternative test.*
- Comment on the IEC bias test (LI + PF) applied at 300 kV and above. *Determine if it is a suitable chopped wave alternative for both live-tank and dead-tank equipment.*
- *If necessary, propose a new test to replace chopped wave.*

Members and Plan

User	Manufacturer
Jarnigan (lead)	Bufl
Collette	Hermosillo
Liu	Kurinko
Schuetz	Weisker
	York

- Meet once a month for one year.
- Provide an update at the S26 and a final report at the F26 meetings.

This gives C37.04 and C37.09 time in case the results of this study group impact their revisions (both expire at the end of 2028 so they should be in ballot at the end of 2027).