

PC37.016 WG, Standard for AC High Voltage Circuit Switchers Rated 15.5 kV (HVCB)

April 9, 2025 – Orlando, FL

Chair: Neil McCord (Consultant)

Vice Chair: Sudarshan Byreddy (Consultant)

Secretary: Luke Collette (Utility)

Meeting Minutes

1. Call to order and introduction:

The PC37.016 WG IEEE Standard for AC High Voltage Circuit Switchers Rated 15.5 kV met on Wednesday, April 9th, 2025, at 10:15 AM Neil McCord, Working Group Chair, presided over the meeting.

2. Introduction of Members and Guests

Roster distributed and attendance recorded (attendance sheet attached to MOM).

63 in attendance with 25 of 34 members (74%) present. Quorum met.

3. Review of Copyright, Patent, and Behavior/Ethics Slides & Call for Patents

Chair called for any potential Patent claims. No Patent claims identified.

4. Approval of Previous Meeting Minutes:

Chair presented MOM from Virtual 2024 meeting:

- Motion to Approve both MOM: Dave Mitchell
- 2nd to Motion: Andy Keels
- Approved by unanimous consent

Chair presented MOM from Fall 2024:

- Motion to Approve both MOM: Andy Keels
- 2nd to Motion: Fernando Ordein
- Approved by unanimous consent

5. Review PAR and Deadline for Project

WG Chair reviewed the PAR, expiration date is 31 December 2025.

HVCB Subcommittee Chair discussed expectations of timeline related to PAR expiration and document revision. October 20th is the last date to request a PAR extension. Recommendation is the

WG should decide during this meeting whether a PAR extension is needed. WG needs to show progress on the document. For this WG, the draft should be completed before submitting a request for a PAR extension.

6. Proposed Revisions to C37.016

WG Chair began a discussion on what to include in the draft for the revision of C37.016.

The working group has an existing task force to define applications for circuit switchers so that the TRV requirements can be defined. The following are existing volunteers for the task force:

Sudarshan Byreddy volunteered to lead the task force. Members include:

- Mark Peterson – Xcel Energy
- Ben Sax – NES
- Dave Mitchell – Southern States
- Pete Marzec – S&C

Task force purpose is to identify the scope and definition to define what a circuit switcher is.

Chair reviewed proposed revisions already included in the draft.

Comment, should the scope be changed to 1000 V and above, rather than 15.5 kV to 245 kV. Comment was made that it would not be a good idea to ask for a change of scope when requesting a PAR extension unless the change in scope was to reduce the scope. Consensus of the WG was to finish work under the existing PAR and then address this in another revision. It is possible to add language to address this under the work of the task force on applications.

Comment was made that a definition already exists for Terminal Fault in other standards, so if we add one it should match. Consensus of the WG is to remove primary bus fault terminology and be consistent with IEEE Std C37.04 on terminology.

A comment was made that some protection schemes can detect faults before the current transformer (CT) and trip the circuit switcher. This would result in the equivalent of a terminal fault for the circuit switcher. WG Chair discussed location of the CT and the importance of the task force to address this in the draft.

At the request of the WG chair, a WG member discussed the origin of IEEE Std C37.06.1.

Chair asked if we need 48.3 kV as a rated maximum voltage. Consensus was to not include the rating.

WG Chair asked for a member to review short-circuit section related to dc component and find appropriate references in IEEE Std C37.04, IEEE Std C37.09, or IEEE Std C37.010 as applicable. Jan Weisker volunteered to review Figure 4 in IEEE Std C37.016-2018 and identify appropriate reference in other documents.

Related to the transformer-limited fault (TLF) ratings, the consensus of the WG is to limit the TLF ratings to TLF1 and add language indicating this as it applies to circuit switcher application.

Motion to request PAR extension:

- Motion to request a PAR extension of 2 years: Andy Keels
- 2nd to Motion: Jan Weisker
- Approved by unanimous consent

7. Future Meetings

Plan for next meeting is two (2) virtual meetings before the next in-person meeting in the Fall of 2025.

8. Meeting Adjourned at 12:00 PM (EDT)

- Motion to adjourn the meeting: Andy Keels
- 2nd to Motion: Chris Jarnigan
- Approved by unanimous consent

Submitted by:

Lucas Collette
WG Secretary, C37.016
Standard for AC High Voltage Circuit Switchers Rated 15.5 kV

and

Neil A. McCord
WG Chair, C37.016
Standard for AC High Voltage Circuit Switchers Rated 15.5 kV

IEEE PES Switchgear Committee

HVCB C37.016 - Meeting Roster

Place / Date of meeting:

Wyndham Grand Orlando Resort Bonnet Creek, Orlando, FL, 4/9/2025

Initial to denote attendance	Last name	First name	Company name	Role	Request Membership
	Alexander	Brian	S&C Electric Co.	Non-Voting Member	
	Allingham	Edward	Hydro One	Non-Voting Member	
	Andreyo	Joe	Southern States	Non-Voting Member	
	Antantis	Michelle	Duquesne Light Co.	Non-Voting Member	
	Ashtekar	Koustubh	JST Power Eq	Non-Voting Member	
	Balasubramanian	Ganesh	Eaton Corp	Non-Voting Member	
	Banda	Eloy	Siemens Energy	Non-Voting Member	
	Beauchemin	Francis	Hydro Quebec	Non-Voting Member	
	Beck	Jason	Dominion Energy	Non-Voting Member	
AB	Beckel	Andy	Xcel Energy	Voting Member	
	Beecher	Zachary	Power Grid Comp.	Voting Member	
	Benedict	Dan	PPL	Voting Member	
	Benge	Jonathan	Oklahoma Gas & Electric	Non-Voting Member	
	Berner	Brian	Power Grid Comp.	Voting Member	
	Bolar	Sanket	Oncor	Voting Member	
NB	Bouche	Nick	Switchgear Power Systems	Non-Voting Member	
	Bray	Elizabeth	Southern Company	Non-Member	
	Bryant	Craig	Duke Energy	Non-Voting Member	
	Bui	Ngoc	SDG&E	Non-Member	
	Byreddy	Sudarshan	Burns & McDonnell	Vice-Chair	
	Cary	Stephen	2 Phase Solutions	Non-Member	
	Castillo	Pedro	ABB	Non-Voting Member	
	Chovanec	Andrew	Power Grid Comp.	Voting Member	
	Collette	Lucas	Duquesne Light Co.	Secretary	
Je	Cunningham	Jason	Southern States Power Grid Comp.	Voting Member	
	Diallo	Boubacar	Southern States	Non-Member	
	Diaz	Lissy	Florida Power and Light	Non-Voting Member	
	Dilillo	Pat	Con Ed	Non-Voting Member	
	Dragan	Tabakovic	Hubbell	Non-Voting Member	
	Dunn	Chris	Dominion Energy	Non-Voting Member	
	Eastman	Maxwell	Black & Veatch	Non-Voting Member	
	Falkingham	Leslie	VIL & S&C	Non-Voting Member	
	Fennell	Bruce	Nashville Electric Services	Non-Member	
CF	French	Chris	Beta Engineering	Non-Voting Member	
	Gonzalez	Mauricio	Avangrid	Non-Voting Member	
	Guidry	Sean	Omicron Electronics	Non-Voting Member	
	Hanna	Robert	JST Power Eq	Non-Member	
	Hartmann	Oliver	Siemens Energy	Non-Voting Member	
	Henriet	Eduardo	Siemens Energy	Non-Voting Member	
	Hermosillo	Victor	GE Grid Solutions	Non-Voting Member	
	Hurst	Bill	GE Grid Solutions	Non-Voting Member	
	Hutchins	Neil	Georgia Power	Non-Member	
IR	Irwin	Todd	GE Grid Solutions	Voting Member	
	Jagadeesan	Bharat	Southern States	Non-Member	
	Jamal	Shah	Avangrid	Non-Voting Member	
	Jarnigan	Chris	Southern Company Services	Voting Member	
	Jensen	Darin	Southern States	Non-Voting Member	

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	Jordan	Jeff	Southern States	Non-Voting Member	
	Kechroud	Riyad	GE Grid Solutions	Non-Voting Member	
<i>EMO</i>	Keels	Andy	kEElectric Engineering PLLC	Voting Member	
	Krause	Dwight	Black & Veatch	Voting Member	
	Lee	Yongwoo	KERI	Non-Voting Member	
	Liu	Linda	Sieyuan Electric	Non-Voting Member	
	Livshitz	Albert	Qualus Services	Non-Voting Member	
	Lopez	Leo	WIKI	Voting Member	
	Ma	Chunming	Burns & McDonnell	Voting Member	
	Mapp	Peter	GE	Non-Voting Member	
	Markham	Jesse	ECI	Non-Voting Member	
	Marshall	Vincent	Southern Company	Voting Member	
<i>PM</i>	Marzec	Pete	S&C Electric Co.	Voting Member	
	May	Steve	Southern Company	Voting Member	
	McCord	Neil	KEC Precision LLC	Chair	
	Meekins	Gary	Southern States	Non-Voting Member	
	Meyer	Peter	S&C Electric Co.	Non-Member	
	Mihretu	Feven	PG&E	Non-Voting Member	
	Miller	Anne	TCI	Non-Voting Member	
	Mitchell	David	Southern States	Voting Member	<i>DM</i>
	Monroe	Andrew	Southern Company	Non-Member	
	Montoya	Stephanie	MKI	Non-Member	
<i>FJO</i>	Ordein	Fernando	Dominion Energy	Voting Member	
	Owen	John	Powertech Labs	Non-Voting Member	
	Palazzo	Mirko	Hitachi Energy	Non-Voting Member	
	Panos	Elias	PG&E	Non-Voting Member	
	Parikh	Sharan	Duke Energy	Non-Voting Member	
	Pellerito	Tom	DTE Energy	Non-Member	
	Peterson	Mark	Xcel Energy	Voting Member	
	Polchinski	Craig	MEPPI	Non-Voting Member	
	Pounders	Isaac	Meiden	Non-Voting Member	
	Ratmiroff	Javier	GE Vernova	Non-Voting Member	
	Rexroad	Aaron	Meiden	Non-Voting Member	
	Richter	Frank	50 Hz Transmission	Non-Voting Member	
<i>BDK</i>	Roberts	Brian	Southern States	Voting Member	
	Rogers	Jon	Siemens Energy	Non-Voting Member	
	Rowell	Amy	Schneider Electric	Non-Voting Member	
	Sakarapanee	Kathryn	Schneider Electric	Non-Voting Member	
	Santulli	Jen	IEEE SA	Non-Voting Member	
	Savulyak	Victor	KEMA	Voting Member	
	Sax	Benjamin	Nashville Electric Services	Voting Member	
	Schiffbauer	Dan	Toshiba International	Voting Member	

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	Schwartz	Skyler	ATC	Non-Voting Member	
	Scott	Jeff	Ameren	Non-Voting Member	
DMS	Sharma	Devki	Retired	Non-Voting Member	
	Skidmore	Mike	AEP	Voting Member	
	Smith	Kirk	Retired	Voting Member	
	Steigerwalt	Don	Duke Energy	Voting Member	
JT	Tarleton	John	Southern States	Voting Member	
	Toups	Vernon	Siemens Energy	Voting Member	
	Trichon	Francois	Schneider Electric	Voting Member	
	Usner	Joe	AEP	Non-Voting Member	
	Voyles	Adam	Ameren	Non-Voting Member	
	Ward	Jeff	Doble Engineering	Non-Member	
	Webb	John	ABB	Non-Voting Member	
	Weeks	Casey	Siemens Energy	Voting Member	
	Weisker	Jan	Siemens Energy	Voting Member	
	Westerdale	Matt	Bureau of Reclamation	Non-Voting Member	
	Young	Marcus	MEPPI	Non-Member	
	Yunseorg	Kim	KERI	Non-Voting Member	
	Zaharko	Sam	MEPPI	Non-Voting Member	
	Zhang	Wei	Southern Company	Non-Member	
	Zia	Danish	UI Solutions	Non-Voting Member	
	Tobin	Tom	S&C Electric Co.	Non-Member	
	ROSE				
	GUAN	LONG	PG&E	Non-Member	
	ZHONG	Jim	ATC	Non-Voting member	
AT	JAIN	RAHUL	S&C ELECTRIC COMPANY	non-voting member	
FCZ	COZIL	FIORI	S&C Electric Company	Non-Voting member	
AB	Brogden	Jeff	Georgia Transmission	Non-Voting member	
	HUGHES	DEREK	GEORGIA TRANSMISSION	N-V	
	Terry	Timothy	Meiden America	N-V	
	LYU	Saunghwan	Federal Pacific	N-V	
AT	Jur	Arthur	Electro-Mechanical	N-V	
CSD	Dunn	Chris	Dominion Energy	N-V	
2P	MASNAAD	NADIA	GE VERNOVA	N-V	
AB	BORNHUT	Albane	GE VERNOVA	N-V	
D.P.	PODGORSKI	DAMIAN	SARGENT & LUNDY	N-V	D.P.
SS	JACKERNAUTH	SIDESH	FLORIDA POWER LIGHT	N-V	

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	Gonzalez	Mauricio	Avangrid	Non-Voting Member	
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	Hanna	Robert	JST Power Eq	Non-Member	
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	Miller	Anne	TCI	Non-Voting Member	
	Mitchell	David	Southern States	Voting Member	
	Monroe	Andrew	Southern Company	Non-Member	
	Montoya	Stephanie	MKI	Non-Member	
	Ordein	Fernando	Dominion Energy	Voting Member	
	Owen	John	Powertech Labs	Non-Voting Member	
WP	Palazzo	Mirko	Hitachi Energy	Non-Voting Member	Y
	Panos	Elias	PG&E	Non-Voting Member	
	Parikh	Sharan	Duke Energy	Non-Voting Member	
	Pellerito	Tom	DTE Energy	Non-Member	
MP	Peterson	Mark	Xcel Energy	Voting Member	
CP	Polchinski	Craig	MEPPI	Non-Voting Member	Y
	Pounders	Isaac	Meiden	Non-Voting Member	
PB	Ratmiroff	Javier	GE Vernova	Non-Voting Member	Y
	Rexroad	Aaron	Meiden	Non-Voting Member	
	Richter	Frank	50 Hz Transmission	Non-Voting Member	
BR	Roberts	Brian	Southern States	Voting Member	
	Rogers	Jon	Siemens Energy	Non-Voting Member	
	Rowell	Amy	Schneider Electric	Non-Voting Member	
	Sakarapanee	Kathryn	Schneider Electric	Non-Voting Member	
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	Savulyak	Victor	KEMA	Voting Member	
	Sax	Benjamin	Nashville Electric Services	Voting Member	
DS	Schiffbauer	Dan	Toshiba International	Voting Member	

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	Steigerwalt	Don	Duke Energy	Voting Member	
	Tarleton	John	Southern States	Voting Member	
	Toups	Vernon	Siemens Energy	Voting Member	
	Trichon	Francois	Schneider Electric	Voting Member	
	Usner	Joe	AEP	Non-Voting Member	
ABV	Voyles	Adam	Ameren	Non-Voting Member	Yes
	Ward	Jeff	Doble Engineering	Non-Member	
	Webb	John	ABB	Non-Voting Member	
	Weeks	Casey	Siemens Energy	Voting Member	
	Weisker	Jan	Siemens Energy	Voting Member	
	Westerdale	Matt	Bureau of Reclamation	Non-Voting Member	
	Young	Marcus	MEPPI	Non-Member	
	Yunseorg	Kim	KERI	Non-Voting Member	
	Zaharko	Sam	MEPPI	Non-Voting Member	
	Zhang	Wei	Southern Company	Non-Member	
	Zia	Danish	UI Solutions	Non-Voting Member	
	Tobin	Tom	S&C Electric Co.	Non-Member	
	VITTOZ	Marc	GE VERNOVA	Non-Voting Member	N
	JACOB	KAI	SIEMENS	Non voting	N
TEST	Tillery	Tim	Howard Industries	non voting	N.
RPR	Rowe	Ryan	TCI Sales	non voting	N
	Alex	Ivanov	Y&Y Power	non-voting mem	N
	Mgunda	McPharlen	HICO America	Non Member	N
RGP	Greutier-Poulin	Renald	Mindcore	Non-member	Y
	BUFI	ARBEN	MEIDEN	N V M	N
SF	FLORES	SERGIO	Schneider Electric USA Inc	Non-M.	N.
ST	JU	Seyoung	HICO America	Non-M	N.
	PARIKH	URMIL	Hitachi Energy Sweden AB	Non-M	N.
JS	Sizemore	Josh	Wika	NVM	N
PI	Shelton	Pete	HICO America	Non-V	N