

Chair: John Webb

Secretary: Marcus Young

Meeting Schedule: 10:15am – 12:00pm

Quorum: Quorum reached (29 of 32 voting members present)

Minutes:

- Introductions of members and guests with affiliations including a quorum count. A quorum was present.
- Review of Patent Slides and call for essential Patent Claims: None
- Review of IEEE Copyright Policy slides: No copyright issues
- Approval of agenda: Motion made by Terry Woodyard. 2<sup>nd</sup> by Jeff Ward
  - Approved by unanimous consent.
- Chair reviewed requirements to gain and maintain voting membership.
- Chair reminded attendees that the WG uses iMeetCentral as document repository. Attendees must request access from the Chair or Secretary.
  - Members: Go to “My Project” -> “My Interests” to join group to get recognition for participation in the WG.
- Chair remarks on PAR items: Chair provided an overview of PAR items and PAR expiration of Dec. 2025. Expected to go to ballot in Spring of 2024.
- Approval of Meeting Minutes from previous meetings
  - S’23: Motioned by: Neil McCord, 2<sup>nd</sup> by: Jeff Ward
    - Approved by unanimous consent.
  - F’22: Motioned by: Terry Woodyard, 2<sup>nd</sup> by: Chris Jarnigan
    - Approved by unanimous consent.
- Review of amendment PAR items and draft text for each
  - Unusual Service Items: Normal Pollution Level
    - WG decided to leave it as is in the current version.
    - WG decided to keep Table C.2 as is in the current version.
  - Electrical Endurance Capability
    - WG suggested to remove from 5.6.2.6.1 requirement for at least one T100s or T100a as IEC allows reaching requirements using T60 and allow C37.09 to have requirements for electrical endurance. Motion to remove requirement for 72.5 kV to require a T100s or T100a by: Jan Weisker, 2<sup>nd</sup> by: Neil McCord – approved by voice vote (one member opposed, no abstentions).
    - 5.6.2.6.2 removal of the line beginning “At minimum.” Motion made by: Jan Weisker, 2<sup>nd</sup> by: Neil McCord – approved by unanimous consent.
  - C37.11 Coordination
    - WG to leave 7.4.1 as is in current version.
    - WG agreed to add language regarding mandatory electrical close. Chair suggested language in 7.4.4 for WG review. WG suggested changing the wording

of the requirement for manufacturers to equip breakers with electrical close. New wording was developed by the WG as follows:.

7.4.4.1 An electrical opening release device with the necessary control auxiliary contacts shall be supplied which is capable of opening (tripping) the circuit breaker when any voltage throughout the control voltage range is applied. See Table 23 for preferred ratings of control voltages.

7.4.4.2 An electrical closing release device with the necessary control auxiliary contacts shall be supplied which is capable of closing (making) the circuit breaker when any voltage throughout the control voltage range is applied. See Table 23 for preferred ratings of control voltages.

- Motion to accept the proposed wording made by: Mike Christian, 2<sup>nd</sup> by: Robert Hannah – Approved by unanimous consent.
- Charging Time
  - WG determined to return to C37.04-1999 which had a requirement that regardless of the required equipment duty, 15 s max charge time.
  - WG agreed with no objections.
- Capacitor Switching Class 'C0'
  - Chair presented options for addressing language on requirements for 'C0' class CBs. Discussion about what a C0 CB must be able to do at a minimum to be classified 'C0'. WG could not reach a consensus and no motion for revision made; to be discussed further in future meetings.
- Should IEEE establish temperature limits for SF6/NOG contacts?
  - Jeremy Hensberger presented findings and the TF was unable to discover any findings to warrant changes in the documentation.
  - Chair made request to WG on whether the WG should pursue the topic further or to shelf the topic. Consensus of the WG was that more data was needed to review before making decisions. It was agreed to support the TF recommendation to make request at HVCB for any data on the matter be submitted to the WG.
- Table 1 Insulation Class 0
  - Chair brought this Table up to working group, but the topic will require further discussion in future meetings.
- Motion to adjourn the meeting: Andy Keels, 2<sup>nd</sup> by Jeremy Hensberger:
- Meeting adjourned

Reported by Marcus Young, Secretary

Attachment: WG Meeting Attendance and Affiliations

Role	Full Name	Company Name	City	State	4/12/2022	8/24/2022	10/18/2022	4/18/2023	10/10/2023
Chair	John Webb	ABB	Pawleys Island	South Carolina	X	X	X	X	X
Secretary	Marcus Young	Mitsubishi Electric	Knoxville	Tennessee	X	X	X	X	X
VM	Arben Bufi	Meiden America Switchgear, Inc.	Peachtree	Georgia	X	X	X	X	X
VM	Stephen Cary	2 Phase Power	Ligonier	Pennsylvania	X	X		X	X
VM	Steven Chen	Eaton Corporation	Moon Township	Pennsylvania	X	X	X	X	X
VM	Andrew Chovanec	Power Grid Components	Chicago	Illinois	X	X	X	X	X
VM	Michael Christian	ABB	Elon	North Carolina	X	X	X	X	X
VM	Lucas Collette	Duquesne Light Co.	Beaver Falls	Pennsylvania	X	X	X	X	X
VM	Sergio Flores	Schneider Electric US, Inc.	Smyrna	Tennessee	X	X	X	X	X
VM	Robert Hanna	JST Power Equipment	Enterprise	Florida	X	X	X		X
VM	Jeremy Hensberger	Mitsubishi Electric	Gibsonia	Pennsylvania	X	X	X	X	X
VM	Todd Irwin	GE Grid Solutions	Smithville	Missouri	X	X	X	X	X
VM	Christopher Jarnigan	Southern Company Services	Moody	Alabama	X	X	X	X	X
VM	Thomas Keels	kEElectric Engineering, PLLC	Mesa	Arizona	X		X		X
VM	Carl Kurinko	Hitachi Energy	North	Pennsylvania	X		X		X
VM	Chang Hoon Lee	HYOSUNG	Changwon-Si	Seoul	X	X	X	X	X
VM	Vincent Marshall	Southern Company	Forest Park	Georgia	X		X	X	X
VM	Steven May	Southern Company	Forest Park	GA				X	X
VM	Neil McCord	KEC Precision LLC	Athens	Georgia	X		X	X	X
VM	Anthony Ricciuti	EATON	Bethel Park	Pennsylvania	X		X	X	X
VM	Victor Savulyak	KEMA	Chalfont	Pennsylvania	X		X		
VM	Daniel Schiffbauer	Toshiba International Corporation	Houston	Texas	X		X	X	X
VM	Carl Schuetz	ATC	Waukesha	Wisconsin	X	X	X	X	X
VM	Jeffrey Scott	Ameren	Bonne Terre	Missouri	X		X	X	X
VM	Michael Skidmore	AEP	Pickerington	Ohio	X	X	X	X	
VM	Donald Steigerwalt	Duke Energy	Harrisburg	North Carolina	X		X	X	X
VM	Vernon Toups	Siemens Energy Inc	Brandon	Mississippi	X	X	X	X	X
VM	Jeff Ward	Doble Engineering Company	Billerica	Massachusetts	X	X	X	X	X
VM	Casey Weeks	Siemens Energy, Inc.	Richland	Mississippi	X		X	X	X
VM	Jan Weisker	Siemens Energy	Berlin	Berlin	X		X	X	X
VM	Terry Woodyard	Siemens Industry, Inc.	Wendell	North Carolina	X	X	X	X	X
VM	Samuel Zaharko	Mitsubishi Electric	Warrendale	Pennsylvania	X	X	X	X	
NVM	Anatoly Akhunov	HICO America							X
NVM	Samuel Andris	KEMA Labs	Doylestown	Pennsylvania			X	X	
NVM	Mauricio Aristizabal	Hitachi Energy	Pittsburgh	Pennsylvania			X	X	X
NVM	Koustubh Ashtekar	JST POWER EQUIPMENT	Lake Mary	Florida			X	X	X
NVM	Ganesh Balasubramanian	Eaton							X
NVM	Harm Bannink	G&W Electric	Zelhem	Gelderland	X	X	X	X	
NVM	Paul Barnhart	UL, LLC	Walkertown	North Carolina	X	X			
NVM	Alexander Bartels	Powell Industries							X
NVM	Andrew Beckel	XCEL Energy							X
NVM	George Becker	Power Engineers Inc.	Clover	South Carolina			X	X	X
NVM	Robert Behl	JST Power Equipment							X
NVM	Sanket Bolar	Oncor							X
NVM	Adam Brooks	Duke Energy	Cincinnati	Ohio					X
NVM	Craig Bryant	Duke Energy	Greensboro	North Carolina			X	X	
NVM	Dave Collette	Mitsubishi Electric	Warrendale	Pennsylvania					X
NVM	Michael Crawford	Mitsubishi Electric	Cranberry Twp	Pennsylvania	X		X	X	X
NVM	Jason Cunningham	Southern States, LLC	Atlanta	Georgia	X		X	X	X
NVM	John Deng	BC Hydro					X		
NVM	Patrick Di Lillo	Consolidated Edison Co. of New	New York	New York	X	X	X	X	X
NVM	Federico Di Michele	CESI SPA	Milano	Milano			X	X	
NVM	Boubacar Diallo	Southern States LLC	Fayetteville	Georgia			X		
NVM	Maxwell Eastman	Black and Veatch	Olathe	Kansas					X
NVM	Kaylor Garcia	Utility Solutions, Inc.	Lincolnton	North Carolina					X
NVM	Nadia Hasnaoui	General Electric					X		
NVM	Christian Heinrich	Siemens AG	Berlin				X		

Role	Full Name	Company Name	City	State	4/12/2022	8/24/2022	10/18/2022	4/18/2023	10/10/2023
NVM	Victor Hermosillo	General Eletric					X		X
NVM	Jennifer Hunter	Mitsubishi Electric	Harmony	Pennsylvania			X	X	X
NVM	Roy Hutchins	Georgia Power Company	Forest Park	Georgia	X	X	X		
NVM	Bharatwaj Jagadeesan	Southern States LLC	Atlanta	Georgia	X	X			
NVM	Darin Jensen	Southern States , LLC					X		X
NVM	David Johnson	HVCB Consulting	Temecula	California					X
NVM	Hyoung Jin Joo	Hyundai Electric					X		
NVM	John Kelly	USBR	Denver	Colorado	X	X			
NVM	KyungKyu Kim	HICO America	Pittsburgh	Pennsylvania					X
NVM	Sangtae Kim	HICO America					X		X
NVM	Yun Seong Kim	KERI							X
NVM	Vladmir Kirienko	Tavrida Electric							X
NVM	Brad Leccia	Eaton	Bethel Park	Pennsylvania			X	X	X
NVM	Yong Woo Lee	KERI							X
NVM	Adrian Lopez	Powell Industries	Houston	Texas					X
NVM	Leo Lopez	WIKA Instrument Corporation	Lawrenceville	Georgia	X		X	X	X
NVM	Josh Lustig	Black and Veatch							X
NVM	Peter Marzec	S&C Electric	Chicago	Illinois	X	X			
NVM	Paul Masterson	Meiden America Switchgear	Peachtree	Georgia	X		X	X	X
NVM	Aaron McReson	Meiden					X		
NVM	David Mitchell	Mitch & Associates	Elizabeth	Colorado	X		X	X	X
NVM	Anthony Natale	HICO America	Pittsburgh	Pennsylvania	X				X
NVM	Raj Nayar	Siemens	Plano	Texas	X				X
NVM	Fernando Ordein	Dominion Energy	Glen Allen	Virginia					X
NVM	Miklos Orosz	Circuit Breaker Technology &	Murfreesboro	Tennessee				X	X
NVM	Sumitabha Pal	Schneider Electric	Smyrna	Tennessee	X	X	X	X	X
NVM	Lalit Patil	Eaton							X
NVM	Damian Perrin	Entergy Services, LLC.	New Orleans	Louisiana				X	X
NVM	Mark Peterson	XCEL Energy	Minneapolis	Minnesota					X
NVM	Craig Polchinski	Mitsubishi Electric Power Products,	Pittsburgh	Pennsylvania	X	X			X
NVM	Anthony Ponders	Meiden America Switchgear, Inc.							X
NVM	Laxminarayan Raja	University of Texas	Austin	Texas					X
NVM	Rakesh Ranjan	Esgee Technologies Inc.	Austin	Texas	X		X		
NVM	Aaron Rexroad	Meiden America Switchgear, Inc.	Mauldin	South Carolina					X
NVM	Brian Roberts	Southern States	Hampton	Georgia					X
NVM	Jon Rogers	Siemens Energy							X
NVM	Oscar Salas	Duke Energy	Sanford	Florida					X
NVM	Alex Salinas	Doble/Vanguard	Ontario	California					X
NVM	Leonel Santos	Schneider Electric	Murfreesboro	Tennessee	X	X			X
NVM	Ben Sax	Nashville Electric Service	Nashville	Tennessee					X
NVM	Oleksandr Sergeyenko	Tavrida Electric North America Inc	Surrey	British Columbia					X
NVM	Devki Sharma	Retired	Halifax	Nova Scotia	X				X
NVM	Hall Sigmon	Siemens Industry, Inc.							X
NVM	Kirk Smith	Retired							X
NVM	Lokesh Solanki	ABB							X
NVM	Tim Tillery	HOWARD INDUSTRIES	Laurel	Mississippi	X				X
NVM	Joseph Usner	AEP	Columbus	Ohio	X	X	X	X	
NVM	Jacob Walgenbach	Siemens	Wendell	North Carolina				X	X
NVM	Matt Westerdale	Bureau of Reclamation							X
NVM	Daniel Wolfe	Mitsubishi Electric	Warrendale	Pennsylvania				X	X
NVM	Richard York	Mitsubishi Electric	Pittsburgh	Pennsylvania	X		X	X	X
NVM	Mina Youssef	Eaton						X	X
NVM	Xin Zhou	Eaton						X	
<b>32</b>					<b>61</b>	<b>31</b>	<b>69</b>	<b>84</b>	<b>79</b>