

1) **Introduction of Members and Guests** Mauricio Aristizabal / Mike Skidmore

Member introductions

Introduction of new members: **No new members introduced during meeting.**

2) **Approval of Minutes of Previous Meeting** Mauricio Aristizabal / Mike Skidmore

Motion for approval of minutes of meeting for Asheville, NC

Moved: **Ken Edwards**

Second: **Dave Mitchell**

**There were no corrections or objections to the minutes of the meeting for Asheville, NC.
The motion passed unanimously.**

3) **Membership**

	ROLE AS MEMBERS	ROLE AS GUESTS	ROLE AS CORRESPONDING MEMBERS	REQUIRED* FOR QUORUM COUNT	TOTAL
HVCB Committee Roster	44	81	11	≥ 50% membership at meeting (≥ 22 members)	136
Attendance Recorded Saint Pete, FL	37	27	1	~86%	65

*Quorum Count includes: Active Members, Chair, Secretary, and (Corresponding Members if present at the meeting)

4) **Chairman's Report** Mauricio Aristizabal / Mike Skidmore

Chairman (Mauricio Aristizabal): m.aristizabal@ieee.org 724-696-1431
 Secretary (Mike Skidmore): mikeskidmore@ieee.org 614-552-1472

- WG chairs need to email minutes of their WG meetings to the subcommittee secretary no later than May 12th, 2015.

5) **Reports of Working Groups**

a) **Technical Paper Reviews** Leslie Falkingham (John Webb)

Leslie Falkingham encouraged more papers to be submitted from the United States.

b) **WG Activities**

HVCB Switchgear Subcommittee Agenda, 4-29-2015, Saint Pete, FL

Document	Title	SubCommittee	WG Chair	PAR	IEEE Status	Activity
PC37.04	Standard for Ratings and Requirements for AC High Voltage Circuit Breakers with Rated Maximum Voltage above 1000 V	HVCB	Jeff Nelson	PAR Expires 12-31-2015	Reaffirmed 2006 Document Expires 12/31/2018	Document sent out for comments before Spring meeting. Meeting held on 4-28-15. Par will be extended.
C37.04-1999 Cor 1-2009	IEEE Standard for Rating Structure for AC High-Voltage Circuit Breakers Corrigendum 1	HVCB	Jeff Nelson		Document Expires 6/17/2019	Will be pulled into .04 – no update needed
C37.04a-2003	IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis: Amendment 1 Capacitance Current Switching	HVCB	Roy Alexander	Included on PC37.04 PAR	Reaffirmed 2006 Document Expires 12/31/2018	Will be pulled into .04 – no update needed
C37.04b -2008	IEEE Standard for Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis Amendment 2: To Change the Description of Transient Recovery Voltage for Harmonization with IEC 62271-100	HVCB	Kirk Smith	Included on PC37.04 PAR	Document Expires 12/31/2018	Will be pulled into .04 – no update needed
C37.06.-2009 ANSI	IEEE Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis - Preferred Ratings and Related Required Capabilities for Voltages Above 1000 V	HVCB	Mauricio Aristizabal	Included on PC37.04 PAR	Document Expires 9/11/2019	Needs amendment to address error in tables 6 and 7 for SLF reference - No update needed at this time - will be pulled into .04
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	HVCB	Sushil Shinde	PAR Expires 12-31-2015	Document Expires 12/31/2018	C37.06.1 will not be pulled into C37.04 (possible timing issue on release of documents) Ballot invitation closed 4-5-15. Draft Document issued to WG for comments 4-7-15. Expect to go out for Ballot by 6-1-15.
PC37.09	IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Xi Zhu	PAR Expires 12/31/2017	Reaffirmed 2007 Document Expires 12/31/2018	On schedule, Goal is to Ballot by Fall 2015 or Spring of 2016. Draft Document issued to WG for review on 3-27-15. Document to be completed by 2017. Expects to reference more clauses from C 37.100.1
C37.09-1999 /Cor 1-2007	IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis – Corrigendum 1	HVCB	Mauricio Aristizabal		Document Expires 12/31/2018	Will be pulled into .C37.09 – no update needed

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Document	Title	SubCommittee	WG Chair	PAR	IEEE Status	Activity
C37.09a-2005 Amendment to C37.09-1999	American National Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis Amendment 1: Capacitance	HVCB	Roy Alexander		Reaffirmed 2007 Document Expires 12/31/2018	Status .09a will be pulled into C37.09. (100.2 will not be ready in time)
C37.09b-2010	IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis – Amendment 2: To Change the Description of Transient Recovery Voltage for Harmonization with IEC 62271-100	HVCB	Kirk Smith		Document Expires 12/8/2020	Will be pulled into .C37.09 – no update needed
PC37.010	Application Guide for AC High-Voltage Circuit Breakers > 1000 Vac Rated on a Symmetrical Current Basis	HVCB	Helmut Heiermeier	PAR expires 12-31-2016	Reaffirmed 2005 Document Expires 12/31/2018	The PAR for C37.010 extended until 12-31-2016, Ballot Recirculation on 12-5-14. Expect to go to re-ballot again in May, 2015
C37.011-2011	IEEE Guide for the Application of Transient Recovery Voltage for AC High-Voltage Circuit Breakers	HVCB	Denis Dufournet		Document Expires 12/31/2021	Revision needed - align with the revised C37.04, C37.09 and with IEEE C37.06.1, also cover some items not covered presently in C37.011 e.g. (systems with compensated lines (Study group formed at Saint Pete – meeting held on 4-27-15) Approximately 6 action items. Expect to submit PAR for work by the end of 2016.
PC37.012	IEEE Application Guide for Capacitance Current Switching for AC High-Voltage Circuit Breakers	HVCB	Anne Bosma		Document Expires 3/31/2021	PAR for corrigendum submitted to correct errors 2-2015. Presentation given at meeting in Saint Pete – Presentation attached to meeting minutes. A decision was made to restrict the corrigendum to Equation 26 only. (The factor 9.5 will not be changed)

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P62271-37-013 (Replaces C37.013 and C37.013a)	Standard for AC High Voltage (rated above 1000 V) Generator Circuit Breakers for Use With Generators Rated 10 MVA or More	HVCB	Bill Long			Re-circulation ballot scheduled to close May 3, 2015. If the IEEE-SA recirculation ballot is successful, then IEEE can authorize IEC to begin circulation of the FDIS.
62271-37-082-2012	Standard for High-voltage switchgear and control gear - Part 37-082: Measurement of sound pressure levels on AC HVCB	HVCB	Leslie Falkingham		Document Expires 12/31/2023	Done - no update needed at this time
C37.013a-2007	IEEE Standard for AC High Voltage Generator Circuit Breakers Rated on a Symmetrical Current Basis - Amendment 1: Supplement for Use with Generators Rated 10-100 MVA	HVCB	Bill Long		Document Expires 12/31/2018	Was pulled into – C37.013 – no update needed – Can be closed once P62271-37-013 is approved.
C37.015-2009	IEEE Guide for the Application of Shunt Reactor Switching	HVCB	Anne Bosma		Document Expires 12/9/2019	PAR was submitted for review in June
PC37.016	Standard for AC High Voltage Circuit Switchers Rated 15.5kV through 245kV	HVCB	Peter Meyer		Document Expires 12/31/2018	Meeting held in Saint Pete on 4-29-15. First committee draft to be submitted by 9-1-15.
C37.017-2010	IEEE Standard for Bushings for High-Voltage [over 1000 V (ac)] Circuit Breakers and Gas-Insulated Switchgear	HVCB-GIS	Devki Sharma		Document Expires 9/30/2020	Parts to be pulled into. 04 and .09. no action needed at this time
C37.081-1981	IEEE Guide for Synthetic Fault Testing of AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Mauricio Aristizabal		Reaffirmed 2007 Document Expires 12/31/2018	Task Force established to evaluate possible implementation of IEC 62271-101 or other options – TF meeting held on 4-28-15 - Motion was passed to support work of IEC 62271-101 into C37.09
C37.081a-1997	Supplement to IEEE Guide for Synthetic Fault Testing of AC HVCB Rated on a Symmetrical Current Basis	HVCB	Mauricio Aristizabal		Reaffirmed 2007 Document Expires 12/31/2018	See C37.081 – Document a part of C37.081 – TF meeting held on 4-28-15. Motion was passed to support work of IEC 62271-101 into C37.09
C37.083-1999	IEEE Guide for Synthetic Capacitive Current Switching Tests of AC High-Voltage Circuit Breakers	HVCB	Mauricio Aristizabal		Reaffirmed 2007 Document Expires 12/31/2018	See C37.081 – Should go into 100.2 or refer back to 62271-101 - TF meeting held on 4-28-15 Motion was passed to support work of IEC 62271-101 into C37.09
C37.10-2011	IEEE Guide for Investigation, Analysis, and Reporting of Power Circuit Breaker Failures	HVCB	Bill Bergman		Document Expires 12/31/2021	No Action needed at this time

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C37.10.1-2000	IEEE Guide for the Selection of Monitoring for Circuit Breakers	HVCB	Dave Mitchell	PAR Expires 12-31-2016	Reaffirmed 2006 Document Expires 12/31/2018	On Track to be finished. Meeting held on 4-28-15. Ballot after Fall 2015 meeting.
PC37.11	Standard Requirements for Electrical Control for AC High-Voltage (>1000V) Circuit Breakers	HVCB	John Webb		Reaffirmed 2003 Document Expires 12/31/2024	Ready to be submitted to REVCOM. Passed and published
C37.12-2008	IEEE Guide for Specifications of High-Voltage Circuit Breakers (over 1000 Volts)	HVCB	John Webb		Document Expires 12/31/2018	Need to start PAR – TF held on 2-28-15. Expect to be done Fall of 2016.
C37.12.1-2007	IEEE Guide for High Voltage (>1000V) Circuit Breaker Instruction Manual Content	HVCB	Ken Edwards		Document Expires 12/31/2018	Need to start PAR - Elevate to a recommended practice instead of guide. No objections at HVCB meeting – Meeting held on 4-29-15. Expect to be done Fall of 2016.
C37.20.6-2007	4.76 kV to 38 kV Rated Grounding and Testing Devices Used in Enclosures	ADSCOM joint HVCB/SA	T. W. Olsen			Ballot in September 2014. Submit to REVCOM. Passed and published.
C37.59-2007	Requirements for Conversion of Power Switchgear Equipment	ADSCOM joint HVCB, SA, and LVSD	Dean Sigmon			Started Work. Two sessions with progress. No updated Needed
C37.122-2010	Standard for High Voltage Gas-Insulated Substations Rated above 52 kV	Joint SUB/SWG HVCB	Jon Brunke			Done - Published
C37.122.3-2011 (was P1712)	IEEE Guide for Sulphur Hexafluoride (SF6) Gas Handling for High-Voltage (over 1000 Vac) Equipment	Joint SUB/SWG HVCB	Gordon van der Zel (Jeff Nelson)		Document Expires 2021	Approved Document

Note: Only those working groups with PAR information are currently active.

6) **Reports of Task Forces**

- a. Joint Capacitor Paper on Transient Limiting Inductor Applications Roy Alexander

Roy reported “TR-16_PES-Technical-Report-on-Transient- Limiting-Inductor-Applications” is available at resourcecenter.ieee-pes.org/technical-reports. However, one may need to log into the resource center database to download the paper. Ken Edwards said he will review if there is a way to add the paper to the IEEE PES switchgear website.

- b. Synthetic Testing Guides (C37.081, .081a, .083) Mauricio Aristizabal

On 4-28-15 a Task Force meeting was held and options were explored to determine a direction for synthetic testing documents. The Task Force passed a motion to support information for synthetic testing into C37.09 and to let C37.081, C37.081a, C37.083 documents expire. The updates and information to be pulled into C37.09 will closely follow IEC 62271-101.

7) **Reports of AdsCom WG/TF**

Capacitance Switching WG (PC37.100.2) Neil McCord
Neil expects to re-ballot the document by June 2015

Common Requirements WG (C37.100.1) David Stone
Anne Bosma provided an update since Dave Stone was not present – C37.100.1 document will attempt to follow closely the updates of 62271-1. C37.100.1 should go to ballot soon.

8) **Reports of CIGRE**

a) A3.32 – Non–intrusive methods for condition assessment Albert Livshitz
(Expect to publish in 2016) – no update

b) A3.26 Influence of shunt capacitor banks on circuit breaker fault interruption duties Anne Bosma
Work is done but Anne is not aware of a planned date of release in Electra

c) A3.27 The impact of the application of vacuum switchgear at transmission voltages Arben Bufi
Done and is published as TB 589

d) A3.29 Deterioration of ageing substation equipment Ken Edwards
Working group is progressing, bulletin at least 2 years out.
Status reported as unknown

e) A3.30 Overstresses in S/E equipment. Ken Edwards

Status reported as unknown

- f) JWG A3/B4.34 Technical requirements and specifications of state-of-the-art DC switching equipment

Jingxuan (Joanne) Hu

New item for DC switching equipment reported by Jingxuan (Joanne) Hu

9) **Old Business**

- a) <https://development.standards.ieee.org/my-site/open-ballot-invitations>

- b) Senior membership grade

Mauricio reviewed criteria for senior membership at the meeting. He suggested that others should apply for IEEE senior membership and the process is very simple to follow. Additional information is provided in attachment.

10) **New Business**

- a) Presentation Reminder – Testing Standards and Certification
(Thursday April 30, 2015 (11:45 AM to 2:45 PM))

Paul Leufkens and Rene Smeets

Mauricio reminded the subcommittee members about the presentation that will be given on 4-30-15.

- b) Elimination of Oil Circuit Breaker Oil Testing from C57.106

Mauricio Aristizabal

Chair provided an update to the HVCB Subcommittee that the transformer committee plans to eliminate C57.106 clause 8 from their document.) (IEEE Std C57.106-2006 – “IEEE Guide for Acceptance and Maintenance of Insulating Oil in Equipment”). A motion was passed to make C37.010 clause 5.27 a dated reference to C57.106 Clause 8. The letter from the transformer committee is attached for reference.

Devki Sharma made the following motion.

Motion: To move clause 8.0 of C57.106-2006 to C37.010 as an appendix

The motion was not seconded and did not pass.

Ken Edwards made the following motion.

Motion: Change C37.010 clause 5.24 to a dated reference and refer to clause 8 of C57.106-2006

John Webb: seconded the motion

Members: 36 members voted “yes”

No members voted “no”

Abstain: 1

Helmut Heiermeier (chair of C37.010) was present at the meeting and agreed to update the reference in C37.010 clause 5.24 accordingly.

- c) Switchgear Definitions Project

Mauricio Aristizabal and Dave Stone

This topic was discussed at the meeting. Several options were provided to the subcommittee per attached presentation. The preferred option was to ask the chair of switchgear assemblies (SA) to modify the document to include HVCB definitions into (PC37.20.10). Another option was to ask ADSCOM to create a universal switchgear definitions document to avoid conflicting definitions throughout switchgear. Document PC37.20.10 already went to ballot so HVCB will create a definitions document which was reported to ADSCOM by Mauricio. Tom Mulcahy offered to be the lead and begin an HVCB definitions document. A PAR will be created later but a template will be given to Tom Mulcahy to begin work.

- d) Indicators & Manual Releases - Common issue SA & HVCB
(Color, Text, and Symbols) Mauricio Aristizabal / Doug Edwards

The Chairman made the subcommittee aware of issues that WG C37.13 is running into with (Color, Text, and Symbols). The issue will be discussed in the ADSCOM meeting and there is a desire to standardize on common wording through several documents. The document provided to HVCB by SA is attached for review.

- e) New item discussed and added to meeting Agenda. Bill Long said that Denis Dufournet provided an excellent update on Monday afternoon for a study group for C37.011. During the meeting Denis showed past and present status of the document and a solid direction needed for C37.011, future work. Bill asked that his minutes be posted with the HVCB minutes as an example of what other chairs should do to help guide members and guests for future working group. The document is attached for reference.

11) Future Meetings

- a) Fall 2015: San Diego, CA September 20th – 24th, 2015
- b) Spring 2016: Sonesta Resort, Hilton Head, SC April 25th – 29th, 2016
- c) Fall 2016: Sheraton, Pittsburgh, Pa.

12) Adjourn