

1) **Introduction of Members and Guests** Rich York
See F09HVCBa1.pdf

2) **Approval of Minutes of Previous Meeting** Rich York/Rod Sauls
Approved

3) **Discussion of IEEE patent policy** Rich York
There is a link on the website to get the patent slides.

4) **Membership (See F09HVCBa2.pdf)**

	Utility	Manufacturer	Independent / Consultants/Corresponding	Guests	Total Membership
Current membership	20	22	14		56
Attendance	12	13	2	20	40

5) **Chairman's Report** Rich York
Chairman (Rich York): richyork@ieee.org +86 10 8456 6688 x3180
Secretary (Rod Sauls): rodsauls@ieee.org 205-257-4143

- Reminder to everyone to review posted meeting minutes.
 - After posting, an email will go out as an announcement

- Minutes to all WG meetings will be posted to the web in pdf format, unless otherwise specified

6) **Reports of Working Groups**

- a) **Technical Paper Reviews** Jeff Nelson
- Jeff Nelson was not in attendance so no update was given.
- b) **WG Activities**

HVCB Switchgear Subcommittee Minutes, 2009-09-30, Denver, CO

Document	Title	SubCommittee	WG Chair	PAR	IEEE Status	Activity
C37.04-1999 Cor_1	IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Jeff Nelson	2007	Approved 2009	Next step .04 revision.
<ul style="list-style-type: none"> Begin revision next meeting. WG meeting will be needed in Spring 2010. 						
C37.04a-2003 Amendment to C37.04-1999	IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Amendment 1: Capacitance Current Switching	HVCB	Roy Alexander		R2006	To be incorporated into new C37.04
<ul style="list-style-type: none"> No Activity 						
C37.04b Amendment to C37.04-1999	IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Amendment 2 Required TRV Values:	HVCB	Kirk Smith		Approved 2008	Active
<ul style="list-style-type: none"> No Activity 						
C37.06-2000 ANSI PC37.06	American National Standard for Switchgear--AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Preferred Ratings and Related Required Capabilities	HVCB	Georges Montillet	2005		Recirculation #5 for D11 closed. Approved by RevCom on Sept 10, 2009
<ul style="list-style-type: none"> Now in Editorial process and should publish in November or December 2009. Will have a 2009 publication date. Ken Edwards mentioned he has a spreadsheet on the .06 standards from 1979 version through present day and well as numbers from IEC. Send him an email if you want a copy of the spreadsheet. 						
PC37.06.1 C37.06.1-2000 ANSI	American National Standard Guide for High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Designated "Definite Purpose for Fast Transient Recovery Voltage Rise Times"	HVCB	Keith Wallace	2009		TF formed S09. PAR approved for revision
<ul style="list-style-type: none"> See F09HVCBa3.pdf Working Group had presentations by Keith Wallace, Ken Edwards and Denis Dufournet as well as discussion on Transformer Limited Faults Will meet in Spring 2010. 						
C37.09-1999	IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Jeff Nelson		R2007	Corrigenda and Errata published. Revision to be undertaken. PAR approved thru 2009

HVCB Switchgear Subcommittee Minutes, 2009-09-30, Denver, CO

<ul style="list-style-type: none"> No Activity 						
C37.09a-2005 Amendment to C37.09-1999	Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Amendment 1: Capacitance Current Switching	HVCB	Roy Alexander			Incorporated into new C37.09
<ul style="list-style-type: none"> No Activity 						
PC37.09b Amendment to C37.09-1999	Draft Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis---Amendment 2 Required TRV Values:	HVCB	Kirk Smith	2005	PAR expires 12/31/09	Draft to be sent to WG for review. D1 initiated in June 09
<ul style="list-style-type: none"> See F09HVCBa4.pdf Hope to ballot by October and complete by the end of 2009. 						
C37.010-2005 in IEEEExplore	IEEE Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Helmet Heiermeier		R2005	Helmet Heiermeier will be the WG Chair
<ul style="list-style-type: none"> WG will be formed to begin revision/reaffirmation in Spring 2010. 						
C37.011-2005	IEEE Application Guide for Transient Recovery Voltage for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Denis Dufournet			Active PAR to revise will be applied for after approval of .04b & .06. Review of comments
<ul style="list-style-type: none"> Working Group met with 20 Guests and 17 Members present. See F09HVCBa5.doc Will need a Spring 2010 meeting. 						
C37.012-2005	IEEE Application Guide for Capacitance Current Switching for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis	HVCB	Anne Bosma			Active
<ul style="list-style-type: none"> Task Force met See F09HVCBa6.pdf Motion was made and approved to reaffirm C37.012 and amend after C37.04 is revised. 						
C37.013-1997 PC37.013	IEEE Standard for AC High-Voltage Generator Circuit Breaker Rated on a Symmetrical Current Basis	HVCB	Bill Long	Approved 2009	R2008	PAR approved to revise and adopt as Dual Logo with IEC
<ul style="list-style-type: none"> Working Group met. This is also a joint WG with IEC (WG 52) Balloting in IEEE and IEC will have to take place on different time schedules. 						

HVCB Switchgear Subcommittee Minutes, 2009-09-30, Denver, CO

PC37.013a	IEEE Standard for AC High-Voltage Generator Circuit Breaker Rated on a Symmetrical Current Basis---Supplement for generators 10 to 100 MVA	HVCB	Bill Long		Approved	Incorporated in C37.013
<ul style="list-style-type: none"> See C37.013 above. 						
PC37.015 C37.015-1993 R2006	IEEE Application Guide for Shunt Reactor Switching	HVCB	Anne Bosma	Approved 2008	In Ballot	Ballot closes September 2009
<ul style="list-style-type: none"> Working Group met with 12 Members and 29 Guests in attendance. See F09HVCBa7.pdf Discussed comments from 1st circulation and will submit to RevCom after 2nd recirculation. No meeting in Spring 2010 is expected. 						
PC37.016 C37.016-2006	Standard for AC High-Voltage Circuit Switchers rated 15.5 kV through 245 kV	HVCB	Peter Meyer	Approved 2009		TF formed to address dual logo issues. NWIP not accepted by IEC.
<ul style="list-style-type: none"> Joint development with IEC failed. 						
PC37.017-20xx	Bushings for HVCB and GIS	HVCB/GIS	Devki Sharma	Approved 2008		WG Formed. Completion desired in 2009.
<ul style="list-style-type: none"> Working Group met with 15 Members and 16 Guests in attendance. See F09HVCBa8.pdf Plan to ballot by end of 2009. 						
C37.081-1981	IEEE Guide for Synthetic Fault Testing of AC High-Voltage Circuit Breakers Rated on a Symmetrical Current basis	HVCB	TBD		R2007	WG/TF is currently not active.
<ul style="list-style-type: none"> No Activity 						
C37.081a-1997	Supplement to C37.081-1981	HVCB	TBD		R2007	WG/TF is currently not active.
<ul style="list-style-type: none"> No Activity 						
PC37.082 C37.082-1982 R2006	IEEE Standard Methods for the Measurement of Sound Pressure Levels of AC Power Circuit Breakers	HVCB	Leslie Falkingham	Approved Sept 2008		WG formed to revise for IEEE/IEC Dual Logo IEC Work Item to be applied for
<ul style="list-style-type: none"> Working Group met with 7 Members and 18 Guests in attendance. See F09HVCBa9.pdf Will be revised for Dual Logo and comprise of 1 meeting per year in Europe and 2 meetings per year in US (IEEE SwGear). The consolidated work will be posted on the website (Leslie Falkingham) Plan to have draft balloted in IEEE in February 2010 and IEC should ballot by end of May 2010. 						

HVCB Switchgear Subcommittee Minutes, 2009-09-30, Denver, CO

C37.083-1999	IEEE Guide to Synthetic Capacitor Current Switching Test of AC High-Voltage Circuit Breakers	HVCB	TBD		R2006	WG/TF is currently not active.
<ul style="list-style-type: none"> No Activity 						
PC37.10 C37.10-1995 R2008	IEEE Guide for Diagnostics and Failure Investigation of Power Circuit Breakers	HVCB	Bill Bergman	Approved 2009		TF formed to coordinate with 1325
<ul style="list-style-type: none"> Working Group met with 19 Members and 11 Guests in attendance. See F09HVCBa10.pdf Plan to have a draft put together and balloted before the Spring 2010 meeting. Will need Spring 2010 meeting. 						
C37.10.1-2000	IEEE Guide for the Selection of Monitoring for Circuit Breakers	HVCB	Bill Bergman		R2006	
<ul style="list-style-type: none"> No Activity 						
PC37.11 C37.11-2003	IEEE Standard Requirements for Electrical Control for High-Voltage Circuit Breakers Rated on A Symmetrical Current Basis	HVCB	Paul Barnett	Approved 2008		WG to review proposed changes to document
<ul style="list-style-type: none"> Working Group met with 11 Members and 20 Guests in attendance. See F09HVCBa11.pdf Will modify document and send out for ballot after next meeting. 						
PC37.12	Guide for the Specification of AC High-Voltage Circuit Breakers	HVCB	Devki Sharma		Approved 2008	D12 approved by Revcom Dec 2008
<ul style="list-style-type: none"> Published, no activity 						
C37.12.1	IEEE Guide for High Voltage (>1000V) Circuit Breaker Instruction Manual Content	HVCB	Bill Bergman		2007	Published
<ul style="list-style-type: none"> No Activity 						
Std 1325-1996	IEEE Recommended Practice for Reporting Field Failure Data for Power Circuit Breakers	HVCB	Bill Bergman/Devki Sharma		R2008	Will be incorporated in C37.10
<ul style="list-style-type: none"> See C37.10 above. 						

HVCB Switchgear Subcommittee Minutes, 2009-09-30, Denver, CO

C37.20.6	4.76 kV to 38 kV Rated Grounding and Testing Devices Used in Enclosures	ADSCOM joint HVCB/SA	T. W. Olsen 919-365-2208 t.olsen@ieee.org		APPROVED 2007	
<ul style="list-style-type: none"> No Activity 						
C37.59	Requirements for Conversion of Power Switchgear Equipment	ADSCOM joint HVCB, SA, and LVSD	Pete Dwyer 610.296.1273 pete.dwyer@ieee.org		Approved 2007	
<ul style="list-style-type: none"> No Activity 						
C57.142	Guide to Describe the Occurrence and Mitigation of Switching Transients Induced by Transformer and Switching Device Interaction	HVCB	Steve Lambert	Approved 2008		Ballot closed Sept 25, 2009 and in comment resolution stage.
<ul style="list-style-type: none"> Recirculation came back on September 25. 						
C57.16	Standard Requirements, Terminology and Test Code for Dry-Type Air Core Series-Connected Reactors	Joint HVCB/Xfmr	Jeff Nelson	2006		Working with Transformer Committee to approve joint WG for TRV information in document.
<ul style="list-style-type: none"> Denis Dufournet mentioned the relation to C37.011 Ken Edwards mentioned the last information from Jeff Nelson was that he was going to talk with Transformer Committee Chair. 						
TLF TF	Transformer Limited Faults	HVCB	Ken Edwards			Will roll work into C37.06.1
<ul style="list-style-type: none"> No Activity 						

7) Reports of Task Forces

- a) "Longer Line Fault" TRV CIGRE A3-19 Roy Alexander
- Still waiting on publication of the CIGRE report.

8) Reports of AdsCom WG/TF

- a) Capacitance Switching TF Neil McCord
- The Task Force met on 9/29/2009.
 - Will combine C37.09a and other relevant IEEE published standards.
 - PAR will be created.

9) Reports of CIGRE

- a) CIGRE circuit breaker performance survey CIGRE A3-06 Bill Bergman
- Survey complete, answers are being validated and expect report early next year.
- b) New Vacuum Interrupter WG Kirk Smith
- Implications on vacuum for >38kV
 - Had first meeting in July with approx 24 people attending, mostly from Japan & Europe.
 - Next meeting is scheduled for March 2010 in China.
- c) CIGRE A3-26 WG dealing with faults near capacitor banks Anne Bosma
- Influence of shunt capacitor banks and series reactors on long line TRV's.
 - Three members will do simulations and discuss at next meeting in December.

10) Old Business

- a) Update on IEEE/IEC Dual Logo Policy Rich York
- Discussed meeting held on 09/28/2009 to discuss IEEE-SA response to HVCB's motion from last meeting to use two numbers on Dual Logo documents. Their initial response was that the policy does not allow the use of two numbers for jointly developed documents and that HVCB should rescind their motion.
 - HVCB will wait for SA to answer more questions pertaining to the policy before making a decision.

11) New Business

- a) Cap Switching classes C0, C1 & C2 issues related to C37.04, .09 & .012 Rich York
- C0 was introduced for general purpose CB's that we knew would restrike
 - It is not listed in all standards and the reason it was introduced was for the transition from general purpose to definite purpose breakers.
 - HVCB should decide whether to keep C0 and keep mandate for C1 & C2 testing for overhead or cable connected systems.
 - Discussion included history of C0, C1 & C2 ratings in IEEE and IEC standards.
 - Roy Alexander brought up the fact that Distribution systems do not care if you have restrikes but Transmission systems do.
 - Bill Long mentioned the possibility of keeping C0 for <=38kV and not for >38kV
 - Leslie Falkingham proposed: Retain C0 rating and make cap switching rating (C1 & C2) optional for 52kV and below for C37.04 revision.
 - HVCB voted on the proposal with 26 Affirmative, 0 Negative, 0 Abstain result thus approving the proposal.
- b) C37.122 HV GIS Substations John Brunke
- C37.122 is very close to balloting and has gone through the C37.100.1 formatting process and the GIS Switchgear document was withdrawn
 - Need to align with IEC

- GIS breakers will reference C37.04, .06 & .09 standards.
 - C37.06 table 16 references GIS
 - 230kV is ok
 - For 170kV and below, the AC-Grd test levels are slightly lower. If we increase the test level, additional equipment and testing will be required.
 - Using the IEC test levels for 72-172kV you will see slightly lower levels.
 - Safety coordination need to be kept in mind.
 - An explanation of the test levels will accompany ballot.
- c) Switchgear O&P Manual, HVCB Scope Review Rich York
- New proposed HVCB scope was shown (see F09HVCBa12.pdf).
 - Should it include 1000Vac and 3000Vdc or 1000Vac and 3200Vdc? This will need to be coordinated with the other Subcommittees to see what levels they are using.
 - Bill Long suggested to accept the scope and give the HVCB Chair the ability to adjust the 3000Vdc or 3200Vdc number accordingly.
 - Motion was passed
- d) HVCB Succession of officers Rich York
- This is Rich York's last meeting as HVCB Chair (Great job Rich! Thanks!).
 - Rod Sauls will assume the Chair position and Mauricio Aristizabal will become Secretary
- e) John Webb mentioned a recent Request for Interpretation Rich York
- Rich York had just gotten it and will review and provide a response. The request pertains to interrupting time as defined in C37.04, .06 & .09.
 - C37.04 defines interrupting time in cycles
 - C37.06 defines interrupting time in milliseconds
 - C37.09 defines interrupting time in milliseconds @50 or 60 Hz. If measured and tested @ 50Hz in milliseconds, do you convert for 60Hz? Bill Long mentioned that you test @ 60Hz and measure.
- f) STLNA: STL Management Committee will meet at the same venue in 2010

12) Future Meetings

- a) Myrtle Beach, SC April 25-29, 2010
- b) Fall 2010 Las Vegas (??)
- Motion to adjourn.... Thanks for a good meeting!!