

IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuses Subcommittee
Place: Disney World, Florida
Date: Wednesday, May 07, 2014
Presiding officer: John Leach - Chair
Recorder: Alan Yerges

MEMBERS PRESENT

Glenn Borchardt	S & C Electric Company
Garry Haynes	ABB Inc.
John Leach	Consultant - T&B/Hi-Tech Fuses/ABB
Chris Lettow	S&C Electric Company
Sean Moody	Mersen
Tim Royster	Dominion Virginia Power
Mark Stavnes	S & C Electric
Alan Yerges	Eaton's Cooper Power Systems

MEMBERS ABSENT

Dan Gardner^	Thomas & Betts – ABB
Jim Marek^	Consultant
Don Parker^	Alabama Power
Jan Zawadzki^	
R. Neville Parry	Eaton
Charles Worthington	Hubble Power Systems

GUESTS

C. Bork	Eaton's Cooper Power Systems
S. Chang	PG&E
S. Cochran	Hubbell
J. Deverick	Dominion VA Power
D. Fitchett	
D. Frisch	McLean Power
F. Lambert	GT/NEETRAC
Scott Lanning	Eaton
Jon Spencer	T&B-Hi-Tech
B. Walter	We-Energies
R. Ward	Aluma-Form
Jim Wenzel	Eaton's Cooper Power Systems

^ Corresponding members

HONORARY MEMBERS

J. G. Angelis, L. R. Beard, R. L. Capra, S. P. Hassler, F. Ladonne, H. Pflanz, R. Ranjan, J. S. Schaffer, F. Muench

1. **Call meeting to order** - at 1:35 PM
2. **Approval of Agenda** – No changes requested, agenda accepted.
3. **Member/guest introduction** – 8 members 12 guests
 - a. **New honorary member: Frank Muench**
4. **Roster check**– roster circulated for correction.
5. **Approval of Fall, 2013 minutes** – Approved.
6. **Report from the Chair:** Nothing new to report, outside of later agenda items.
7. **Standards status report: No changes between Fall, 2013.**
 - a. Attached as Annex “B”
 - b. PAR for C37.41 and C37.42 requires completion by 2016.
8. **Working Group Reports**
 - a) **Revision of Fuse Specification Standards – M. Stavnes.** Mark reported that:
 - The Revision of Fuse Specification Standards Working Group met on Tuesday, 5/6/14 with 14 Members in attendance, and 4 Guests.
 - Alan Yerges was named secretary for the Working Group.
 - They reviewed D8 of PC37.42 and agreed to focus this document as exclusively as possible on Preferred Ratings, Design Test Requirements, Construction, and Marking Requirements – removing anything that is a better fit in C37.41. Review is basically complete and on hold until the completion of C37.41 – in order to assure alignment between the two standards.
 - The third draft of C37.45 was reviewed. Timing of completion will depend on the completion of C37.41.
 - The decision was to apply for C37.45 PAR in the next four months, but ballot simultaneously with C37 41 and 42.
 - b) **Revision of Fuse Standards - J. G. Leach.** John reported that:
 - The revision of fuse standards Working Group met on Wednesday May 7th with 19 members and 4 guests.
 - Reviewed proposed changes to C37.41, and made several positive steps toward identifying other items that require work, including:
 - Alignment with Standard 4 for dielectric testing.
 - Task Force (Chris Lettow-chair)
 - 10 members: Glenn Borchardt, Sterlin Cochran, Jonathon Deverick, Dave Frisch, Garry Haynes, Chris Lettow, Tom Stefanski, Jim Wenzel, Charles Worthington, Alan Yerges.
 - Scope: Enhancing the standard for transformer secondary fault testing of cutouts.
 - Report at the next meeting to determine ability to make any changes to the current revision.
 - If consensus on change can't be completed in time, an interim change was already proposed for the standard (changing the "random" making angle for I₄ to "-5° to 15°") .

- Definition improvement continues.
- It was agreed to incorporate the IEC pulse withstand testing for "Motor starter" fuses.

9. Report of liaison to other committees

a. ER&P Committee (J. G. Leach)

1. Continuing push in the Switchgear committee to write technical papers.
2. Fellow nominations continues to be an area of focus.
3. Presentation at Fall meeting on how to write papers and nominate fellows.

10. IEC Report – J.G. Leach:

- a. MT3 (CL fuses) met in London, March 20-21st, 2014.
- b. Amendment for IEC 60282-1 issued as a Final Draft International Standard (contains liquid tightness tests for transformer applications similar to C37.41).
- c. Changes to next edition of IEC 60282-1 have been proposed, and accepted by the MT, to bring voltages and testing into line with IEEE for Series II "North American" voltages.
- d. Motor circuit fuse additional testing, from IEC 60644, will be incorporated into IEC 60282-1.
- e. In IEC 60282-1, there will be separate sections for type tests that apply to all fuses and those that apply just to specific fuse types and applications.
- f. The full TAG report is attached as Annex "A".

11. Unfinished business – None

12. New business – Working group schedule will change so that C37.41 will now start meeting Tuesday mornings (2 morning sessions), and into Wednesday morning (1st morning session). C37.42 will be scheduled for Wednesday morning (2nd session) in order to be able to respond to changes that affect C37.42.

13. Next meetings:

Fall 2014, (September 21-25), Renaissance Hotel, Asheville, NC

Spring 2015, (April 26 – 30), Tradewinds Island Resorts, St. Pete Beach, FL

Fall 2015, (September 20 – 24), Catamaran Resort Hotel, San Diego,

Spring 2016 (25 - 29 April), Sonesta Resort, Hilton Head, SC USA

14. Adjournment – 2:30PM

Annex A

IEC Report

SC32A - U.S.A. Technical Advisory Group

Dr. John G. Leach, Technical Advisor ♦ j.g.leach@ieee.org ♦ 828-256-3744 ♦ Fax 828-322-2376

IEC Report 2013-2 September 2013 to April 2014



From: Dr. John G. Leach, Technical Advisor SC32A, May 2nd 2014

Summary

Since the September 2013 report there has been a meeting of MT3 in London UK on Thursday March 20th and Friday March 21st 2014. The FDIS for the amendment to IEC 60282-1 has been issued (March 21st 2014).

The next meeting of MT3 is to be held in Geneva, Switzerland, at IEC headquarters, on March 18th and 18th 2015. It is also anticipated that we will be able to meet around the 10th ICEFA (fuse conference) in Dresden Germany September 14-16th 2015. The 80th General meeting of the IEC will be in Frankfurt, October 10 to 15, 2016. It is anticipated that TC32 and all three subcommittees will meet.

Reports of activities

TC32

The Technical committee (Chair Stephen Lawson) met in New Delhi, 2013-10-26. This was the first time the TC had met in several years and was in response to concerns by the Standards Management Board that the TC was not viable. Some common projects are planned, including a TC Maintenance Team for definitions.

MT3

The current-limiting fuse maintenance Team met in London UK, Thursday-Friday March 20/21 2014. Participants were:

Harold Handcock

Ulrich Haas

John Leach (Convenor IEC 32A MT7)

Stephane Melquiond

Juan-Carlos Perez-Quesada (Convenor IEC 32A MT4)

Jože Pihler

Norbert Stein (Convenor IEC 32A MT3 and MT6)

Mariusz Wilniewczyc (Chair SC32A)

It was reported that Frank Muench has retired and left all IEC teams.

Voting on the CDV 32A/309/RVC closed on 2013-07-26 and comments were handled by e-mail. A “results of voting” (32A/309/RVC) was issued on 2013-10-18. An FDIS was produced and included several editorial “clarifications” to the CDV. After a delay, caused by the need for a French translation, the IEC editors requested some changes and the secretary agreed without consulting members of the MT. Changes were primarily due to concerns that the wording in several notes was too demanding (sounding like requirements. Most changes were deemed acceptable (particularly as we are working on the next revision). However, one change was felt to need correction, and it will be possible to make this as an editorial change and appropriate wording will be suggested with the USA vote. The FDIS was issued on March 21st, while our meeting was taking place.

The maintenance team discussed items of the work program based on proposals that had been received. Series II (North American) preferred voltages and associated TRV and dielectric tables had been proposed by John Leach (based on current IEEE practice). While the proposals in general were accepted, several were modified after discussion. The proposal (John Leach) to incorporate the remaining parts of IEC 60644 (motor circuits) into 60282-1 was discussed. It was decided that the present distinction between type tests and special tests was arbitrary and confusing. The decision was therefore made to divide the document into tests that are required for all fuses and tests relevant to a particular fuse type or application. The tests in 60644 for motor circuit fuses would then logically fall into this latter section. In addition to discussions involving document restructuring generated during consideration of the mentioned topics, proposals from Ulrich Haas and Mariusz Wilniewicz were discussed. These included test requirements for thermally activated strikers (strikers that, in addition to the “normal” mode of release when the fuse operates, are tripped when the temperature or heating of the fuse reaches a certain level). Ulrich’s proposals covered several practical testing issues (position of fuse, method of measuring temperature, etc.) and are likely to affect IEEE fuse documents also. John Leach also made a brief presentation of a issue that has occurred in the USA in which Back-Up fuses having a very short TD3 melting time may not be correctly tested if the making angle (presently specified as “random”) is such that significant asymmetry is present. John will make a proposal, probably limiting the use of random timing to longer than a particular pre-arcing time (e.g. > 0,1 s).

Date and place of next meeting: The next meeting of MT3 is to be held in Geneva, Switzerland, at IEC headquarters, on March 18th and 18th 2015. It is also anticipated that we will be able to meet around the 10th ICEFA (fuse conference) in Dresden Germany September 14-16th 2015. The 80th General meeting of the IEC will be in Frankfurt, October 10 to 15, 2016. It is anticipated that TC32 and all three subcommittees will meet.

John Leach, 5/02/14

Annex "B" Project status

Document	Title	Sub-Committee	WG Chair	PAR	IEEE Status	Activity/Plans
C37.40	Standard Service Conditions and Definitions for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories.	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2003 R2009	To be combined with C37.41
C37.41	Standard Design Tests for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories	HVF	John Leach 828 256 3744 j.g.leach@ieee.org	Approved 2012-16 Revision	Approved 2008	Revision to incorporate C37.40
C37.42	Standard Specification for High-Voltage (>1000 V) Expulsion Type Distribution Class Fuses, Fuse and Disconnecting Cutouts, Fuse Disconnecting Switches, and Fuse Links, and Accessories Used with These Devices.	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com	Approved 2012-16 Revision	Approved 2009	Revision to incorporate C37.43, C37.46 and C37.47
C37.43	Standard Specifications for High-Voltage Expulsion, Current-Limiting and Combination Type Distribution and Power Class External Fuses, with Rated Voltages from 1kV through 38kV, Used for the Protection of Shunt Capacitors	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2008	None – to be combined with C37.42
C37.45	Standard Specifications for High-Voltage Distribution Class Enclosed Single-Pole Air Switches with Rated Voltages from 1kV through 8.3kV	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2007	Revision to incorporate material from C37.41 and C37.40 – PAR to be requested in 2014 for completion by 2016
C37.46	Standard for High-Voltage (>1000 V) Expulsion and Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches.	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2010	To be combined with C37.42
C37.47	Standard Specifications for High-Voltage (>1000 V) Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2011	To be combined with C37.42
C37.48	Guide for Application, operation, and Maintenance of High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2005 R2010	None - Good to 2020 PAR to combine C37.48 and C37.48.1 with IEC/TR 62655 to be sought in 2014
C37.48.1	Guide for the Application, Operation, and Coordination of High Voltage (>1000 V) Current-Limiting Fuses.	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2011	None – Good to 2021 See C37.48