

IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuses Subcommittee
Place: San Diego, CA
Date: Wednesday, October 3rd 2012
Presiding officer: John Leach - Chair
Recorder: Frank Muench - Secretary

MEMBERS PRESENT

G. Borchardt	S & C Electric Company
G. Haynes	ABB Inc.
J. G. Leach	Consultant - T&B/Hi-Tech Fuses
Chris Lettow	S&C Electric Company
Sean Moody	Mersen
F. J. Muench	Cooper Power Systems
M. Stavnes	S & C Electric
Alan Yerges	Cooper Power Systems
J. Zawadzki	Powertech Labs Inc.

MEMBERS ABSENT

D. Gardner^	Thomas & Betts – Hi-Tech
J. R. Marek^	Consultant
D. Parker^	Alabama Power
R. N. Parry^	Eaton
T. E. Royster^	Dominion Virginia Power
^ Excused	

GUESTS

Sam Chang	PGE
Doug Fitchett	American Electric Power
Ricardo Martinez	CFE LaPEM
Jon Spencer	T&B
Charles Worthington	Hubble Power Systems
Erin Spiewak	IEEE

HONORARY MEMBERS

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

1. **Call meeting to order** - at 1:30 PM
2. **Approval of Agenda** – No changes requested, moved seconded and agenda accepted.
3. **Member/guest introduction** – 9 members 6 guests
4. **Roster check**– roster circulated for correction. Ron Beard and Herb Pflanz had been nominated as honorary members of our subcommittee, and were approved.

5. **Approval of May 2nd 2012 minutes** – Reviewed and approved without change.
6. **Report from the Chair:** – will be covered in later agenda items.
7. **Standards status report:** Attached as Annex “B”. No change in standards status since last meeting. Last document C37.48.1 published spring of 2012. Summary:

8. Working Group Reports

- a. **Revision of Fuse Specification Standard – M. Stavnes.** Mark reported that:
 - Meeting was held on Tuesday, October 2 with 15 members and 1 guest. Group is currently working on one document with an active PAR, C37.42
 - Working group reviewed draft 6 with continuous effort to align with the next version of C37.41 and IEC whenever possible.
 - When parts do not align with IEC, we continue to move them to annex sections (normative or informative) and the group agreed to move some additional content there at the meeting.
 - A new annex with historical content written by Jim Marek was included in this draft for the first time and is being reviewed by the other working group members.
 - The Group is also preparing to work on C37.45 – HV Single-Pole Enclosed Air Switches, to bring it up to date with the changes to C37.41 and C37.42 but this work has not started yet. Plan to begin work at our next meeting with PAR to follow within a few months thereafter.
- b. **Revision of Fuse Standards - J. G. Leach.** John reported that
 - The revision of fuse standards Working Group met on Wednesday October 3rd with 12 members and no guests.
 - The group presently has no PAR for the revision of C37.41, to incorporate C37.40, because members had not been able to agree on wording for the scope of the revised document. Discussions at the meeting successfully resolved opinions and it was decided to redefine "fuse cutout" to include a "cutout fuse link (normally supplied separately)" to bring us into line with what virtually everyone believes is a fuse cutout, i.e. a fuse (not just a fuse holder). With the scope and introduction resolved, a PAR will be sought immediately.
 - A second key decision was to drop power and distribution classifications and refer to fuse classed as IEC does, Class A (like distribution fuses) Class B (like power fuses).
 - After the morning break, the polymer insulators task group reported on proposed modification of the C34.41 standard to reflect the requirements of polymer insulator based cutouts (and potentially other fuses). An organizational draft was discussed, and some changes were suggested together with several areas identified as needing improvement. There was general acceptance of the basic structure, and the task force was congratulated on making good progress in a new area requiring our attention.

9. Report of liaison to other committees

a) ER&P Committee – J. G. Leach:

There was a substantial discussion of the awards process. Subcommittee chairs were encouraged to come to meetings having identified working groups/standards eligible for

awards. John noted that our subcommittee had received several awards over the last few years as he has been doing this!

10. Report of IEC activities - J. G. Leach:

John reported that MT3 and WG6 have both met in the last six months. Discussions of comments received to a CD for an amendment to IEC 60282-1 (CL Fuses) focused on negative comments from Germany and the USA. The basis of these comments was the recognition that the fuse standard is based on the fuses being used on 3-phase effectively grounded systems. Some fuses are used on systems that are not effectively grounded and require a 15% higher rated voltage than the system voltage. A proposal change to the application section was developed that reflect requirements for this application. A second CD was circulated July 6th with a response due Nov 9th. There is a meeting in London November 27th to review any comments and finalize the document.

There is also a request for new work. John feels that test methods need some modifications to reflect the non-grounded applications, but the standard can't force a retest of existing products. A proposal to define the new requirements without forcing a retest was supported by the subcommittee members present. We may need to do the same for our Class B [power] fuses in C37.41, involving making the "87%" testing an option for fuses intended for use on three-phase systems.

WG 6 – the tutorial and application guide is essentially finished and used a significant amount of material from our C37.48 and C37.48.1 IEEE documents. Copyright permission for this is needed from IEEE but difficulty has been experienced in obtaining this. The guide cannot be an IEC standard since no testing is mandated (which is a requirement for IEC standards). It will therefore be published as an IEC technical report. It is presently under its final ballot (as a draft Technical Report) and should be issued in 2013. At the next update of C37.48, we may move to this document with minor additions for certain US practices.

The capacitor fuse document, 60549, developed by WG 7 is nearly complete, with minimal comments expected on the CDV ballot currently in progress.

TC32 – This is the "parent" committee of HV fuse subcommittee SC32A, and has not met in several years. The plan is to decide if there are tasks needed to allow re-activation of TC32. If not the alternate plan is to dissolve technical committee 32 and make the subcommittees separate autonomous technical committees. A final decision by IEC will be made in 2013.

The full TAG report is attached as Annex "A".

11. Unfinished business – None

12. New business – none

13. Next meetings:

Spring 2013 (29th April – 2 May) The San Luis Conference Center, Galveston TX

Fall 2013 (16th September – 18th September) Hilton Palacido del Rio, San Antonio TX

Spring 2014 (5 May – 8 May) Disney Contemporary Hotel, Orlando, FL.

Fall 2014 TBD

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

14. Adjournment – 2:30PM



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 2012-2 April 2012 to October 2012

From: Dr. John G. Leach, Technical Advisor SC32A, September 27th 2012

Summary

Since the April report there has been a meeting of MT3 and WG6 in Cologne, Germany. The second CD for an amendment to IEC 60282-1 was circulated on July 6th, with a closing date of November 9th 2012 and the DTR (Draft Technical Report – equivalent for a technical report to a Final Draft International Standard) for the Tutorial and Application guide was issued on September 14th, with a closing date for the ballot of November 16th. The Committee Draft Vote document for the revision of the Capacitor Fuse standard was issued on June 29th, with a closing date of November 30th 2012.

MT3

MT3 met in Cologne, Germany on May 22nd 2012 with eight members and Subcommittee Secretary Didier Fulchiron present. The CD for an amendment to IEC 60282-1 (32A/289/CD) had closed for comments on 2012-03-23. The comments received were reviewed by Norbert Stein, John Leach and Mariusz Wilniewicz and responses were submitted to Didier. Because the comments were quite extensive, a decision was made to issue a second CD, and the purpose of this meeting was to review all of the comments and make appropriate changes to produce a second CD. This was done and the MT came to an agreement on all of the comments submitted. The primary cause of contention in the first CD was the changes to 5.1.2 “standard conditions of use” to reflect the fact that testing prescribed in IEC 60282-1 originally assumed that fuses will be used in an effectively earthed three-phase system. Other earthing, or use in single phase systems, requires application information to select the correct voltage rating, even if such systems are “usual” in some parts of the world. Alternative wording for the “standard conditions of use” was therefore developed which, it is believed, will satisfy all concerned parties, drawing sufficient attention to the issue to, hopefully, avoid incorrect use of fuses tested to the minimum requirements of the standard. The second CD was circulated on July 6th, with a closing date of November 9th. A meeting in London has been arranged for November 27th to address any comments to the CD and prepare a CDV (committee draft vote)

WG6

MT3 met in Cologne, Germany on May 22nd 2012 with eight members and Subcommittee Secretary Didier Fulchiron present. The second committee draft of the new Fuse Tutorial and Application Guide was circulated in January 2012 with a closing date for comments of April 13th. Comments received from the circulation of the second CD of the Tutorial/User Guide had been sent to WG members by Didier, but the official circulation of Comments would occur after this meeting. Didier therefore required that, rather than the members reviewing the comments/changes to the CD in order to create the DTR (Draft Technical Report), the primary

task of the meeting would be to make recommendations for the "Observations of the Secretary" to enable him to prepare the CC. He therefore led the meeting and all comments to the CD were reviewed and appropriate comments for the CC were generated. A document containing all of the agreed changes, as well as others only agreed in principle was prepared by John Leach and circulated to members in mid-June. A translation into French was needed before the DTR circulation, leading to a number of minor changes (including discussions of the term cut-out for which there is no adequate French equivalent). The DTR (32A/295/DTR) was finally issued on September 14th, with a closing date for the ballot of November 16th. No changes, other than minor editorial ones, will be permitted after the ballot, but an editing team (at least Stein, Leach, and a French member) will meet during the November London MT3 meeting to address any editorial issues.

MT7

The Committee Draft Vote document (32A/294/CDV) was circulated on June 29th with a closing date of November 20th 2012. In light of the limited comments to the CD it is not anticipated that there will be any significant comment to the CDV, so minimal effort should be needed to generate the FDIS.

Future work

Since the current work of MT3, WG6, and MT7 are all coming to an end, one purpose of the London meeting is to discuss future work. Several issues with IEC 60282-1 arose during the preparation of the amendment that were beyond its scope. Member countries are invited to submit proposals for changes to the Secretary of SC32A via their National Committees.

Future of TC32

For a number of years the future of the technical committee has been in doubt. It has not been active and held meetings for a number of years. A one day meeting was held in Frankfurt on June 27th with representatives of the three subcommittees present, to generate a proposal for consideration by the Standards Management Board of IEC. Two options were identified as possible, the preferred being to give some tasks to the Technical committee in order to make it functional again. The second preference was to abandon the TC and make each subcommittee an autonomous technical committee. A decision will be made in 2013.

The next meeting of MT3 will take place on November 27th/28th in London UK. John Leach plans to attend.

Other business:

Our former TC32/SC32A TAG secretary, Gerard Winstanley, left NEMA in May. In June he was supposed to respond to ANSI to approve John Leach continuing as TA for TC32. Gerard has recently been replaced by Gary McFadden, who is attempting to find out if the recommendation was made. This, of course, will be academic if TC 32 is abandoned!

John Leach, 9/27/12

Annex "B" Project status

Document	Title	Sub-Committee	WG Chair	PAR	IEEE Status	Activity
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	None
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 2008	None
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
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	None
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	None
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	None
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
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