

IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuse Subcommittee
Place: Ashville, North Carolina
Date: May 6th 2009
Presiding officer: John Leach - Chair
Recorder: Frank Muench - Secretary

MEMBERS PRESENT

G. Borchardt	S & C Electric Company
R. L. Capra	Consultant
G. Haynes	ABB Inc.
J. G. Leach	Consultant - T&B/Hi-Tech Fuses
F. J. Muench	Cooper Power Systems
D. Parker	Alabama Power
T. E. Royster*	Dominion Virginia Power
M. Stavnes	S & C Electric

MEMBERS ABSENT

J. G. Angelis*	Consultant
F. Calderon	AC Electric Systems
H. E. Foelker*	Central Power & Light
Dan Gardner	T&B – Hi-Tech
S. P. Hassler*	Cooper Power Systems
F. Ladonne*	Underwriters Laboratories
J. R. Marek	Consultant
R. N. Parry	Cutler Hammer
R. Ranjan*	Consultant
J. S. Schaffer*	G & W Electric Co.
J. Zawadzki	Powertech Labs Inc.

* Correspondence Only

GUESTS

Sam Chang	PG&E
Ed Jankowich	T&B
Chris Lettow	S&C
Sean Moody	Ferraz Shawmut
Raghunath Parathsarathi	Bechtel Power
Jon Spencer	T&B Hi Tech

1. **Call meeting to order** – the meeting began at 1:30PM.
2. **Member/guest introduction** - Members and guests introduced themselves.
3. **Roster check** - Membership changes: After the last meeting Dan Gardner met the requirements for membership. Apologies were received from John Schafer, Neville Parry, Dan Gardner, and Jim Marek.
4. **The IEEE Patent Policy** - The patent/inappropriate topics slides were reviewed.
5. **Approval of October 15th 2008 minutes** – minutes were approved without change.
6. **Report from the chair** - C37.41 has been approved and is in print. C37.40 has been reaffirmed, (2009 reaffirmation) – this required some editorial review (due to a

discovered error) to get it through the system, and some communication issues with REVCOM were successfully dealt with. A second printing [C37.40-2003 (R2009)] includes an errata to deal with a Table error, introduced during the editing process, that had not been noticed originally. John Leach will forward a copy with the errata to SC members.

7. Standards status report - this was presented and is attached to these minutes (attachment B).

8. Working Group Reports

a) Revision of Fuse Specification Standards: Mark Stavnes reported that 8 members and 1 guest were present at the Tuesday morning meeting. After reviewing the patent/inappropriate topics slides, the following items were discussed:

- C37.42 Draft 10 balloted. 93% approval rate; 43 affirmative, 3 negatives, 3 abstentions. 52 comments were dealt with, and draft 11 will be recirculated..
- C37.46 PAR submitted for review at NESCOM May 1 meeting. No information available as of yet. Draft created. Will review draft with a goal to ballot this year.
- C37.47 PAR submitted for review at NESCOM May 1 meeting. No information available as of yet. Draft created. Will review with a goal to ballot after comments are received on C37.46 ballot.

b) Revision of Fuse Standards: John Leach reported that the group met on the morning of May 6th with 11 members and 10 guests. After reviewing the patent/inappropriate topics slides, the following items were discussed:

- The group began a review of C37.48.1 in preparation for applying for a PAR. The goal was to identify needed changes to correct errors and identify improvements. Changes include correcting illustrations and minor wording changes.
- The group received a presentation from Frank Lambert of NEETRAC regarding possible new tests for polymer cutouts. The goal is to define a reasonable test program to prevent possible failures in the future. It was generally agreed that an initial testing program of a variety of manufacturer's cutouts should be based on application requirements and so all cutouts should receive the same tests (e.g. voltage should be related to cutout rated voltage not insulator creep distance).

9. Report of liaison to other committees

a. ER&P Committee – J. G. Leach

Awards – nominations will be submitted for the International Award and a standards medallion award. An honorary membership will be offered to someone who has retired but is still active. Dave Stone will be asked to do a presentation on C37.100.1 for the Thursday PM session.

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

The editing MT3 team and Ad Hoc Group 1 met in Paris to continue the development of a proposed application guide for fuses. A proposal to the Sub-Committee (SC32A) in October in Tel Aviv, Israel, was completed. The team is looking at gathering full range of IEC guides and US practices and guides, covering items such as fuse-to-fuse coordination into the document. Substantial development of the guide, before

permission to initiate the project is given is needed to allow the actual production of the document to meet time requirements of the IEC. The final IEC document may be able to be adopted as an IEEE document. See the attached IEC report (Attachment A).

11. Unfinished business

NEETRAC Report – was presented in the revision of Fuse Standards meeting.

12. New business

- The sub-committee scope needs to be addressed, since the present scope calls for our addressing all matters with regard to fuses above 600 AC and 1500 V DC. Scope on webpage calls for 1500 V AC and 3000 V DC; both are incorrect. Proposal is to move to above 1000V AC. We current do not deal with DC fuses. LV fuse groups presently cover up to 1000 V AC and 1500 V DC. UL follows a path that says 1000 V AC and 1500 A DC for low voltage.
- DC fuses may experience difficulty in interrupting current in some circuits due to the possibility of low rate of rise of current (high L/R circuits). Arc voltage must drive current close to zero to produce arc extinction due to the lack of voltage reversal compared to AC. DC testing is therefore somewhat different than AC testing, and our membership has little expertise in this area. We do not have any standards for DC fuses in our standards base.
- Consensus was that our scope should be above 1000 V AC. John made the motion that our scope should be “The treatment of all matters relating to fuses above 1000 V AC.” Seconded by Frank Muench and unanimously approved. It was noted that we had a quorum. This will be brought before ADSCOM, and then the Main Committee for approval.

13. Next meeting

- September 27 – October 1, 2009 - Hyatt Convention Center, Denver CO
- April 25 - 29 Myrtle Beach, NC, Sheraton

14. Adjournment took place at 2:30 PM.

Respectfully Submitted,

Frank Muench Secretary/John Leach, Chair, 5-13-09

Attachment "A"

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 2009-1 May 2009



From: Dr. John G. Leach, Technical Advisor SC32A, May 5th 2009

IEC actions since October 2008:

A meeting of The MT3 editing group and AHG1 (Ad Hoc group on fuse application guide) took place in Puteaux, Paris, France on March 24th and 25th 2009. John Leach attended these meetings.

Editing Group

This group met in preparation for the AHG1 meeting and to help bring up to speed the new Chairman of SC32A Mariusz Wilniewicz (Poland). The state of various IEC documents was discussed, including the need for IEC 60549 (capacitor fuse standard). This standard is old and apparently not used in Europe. The possibility of incorporating capacitor fuse work from C37.41 was discussed.

A new version of IEC 60282-1 is to be published, incorporating the editorial corrections previously circulated as a CDV. An FDIS will be sent out for National Committee approval.

The next MT3 meeting will be at the IEC General Meeting October 18th – 22nd 2009, in Tel Aviv, Israel.

AHG1 meeting

Fuse User's guide: John had made the changes discussed at the meeting in Arnhem, and circulated them as Draft 5 early in January. The meeting took this draft and examined the proposed changes together with new proposals from several members.

It was felt that the basic structure that the AHC had developed was sufficient for the purpose of obtaining approval from the Sub-Committee to proceed with this project. A proposal was therefore generated, which will be submitted to the National Committees in June. It was felt to be unnecessary (and undesirable) to circulate the whole of the current draft, but instead to include the index from it. This will indicate the scope and complexity of the proposed document, without inviting specific comments as to its content, as several sections are still undergoing change. It was anticipated that the AHG would continue to refine the guide before the sub-committee meeting in October.

John Leach, 5-5-09

Attachment "B"

Document	Title	SubCommittee	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 j.g.leach@ieee.org		Approved 2003 R2009	Reaffirmed 3/19/2009
C37.41	Standard Design Tests for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories	HVF	John Leach j.g.leach@ieee.org		Approved 2008	Published 3/13/2009
C37.42	Standard Specification for High-Voltage Expulsion Type Distribution Class Fuses, Cutouts, Fuse Disconnecting Switches and Fuse Links	HVF	Mark Stavnes MStavnes@sandc.com	2007	Approved 1996	In revision. First ballot in progress
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 j.g.leach@ieee.org		Approved 2008	Published 7/25/08
C37.45	Standard Specifications for High-Voltage Distribution Class Enclosed Single-Pole Air Switches with Rated Voltages from 1kV through 38kV	HVF	Mark Stavnes MStavnes@sandc.com		Approved 2007	Published 9/20/2007
C37.46	Standard for High-Voltage Expulsion and Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches	HVF	Mark Stavnes MStavnes@sandc.com		Approved 2000	PAR for revision applied for
C37.47	Standard Specifications for High-Voltage Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches	HVF	Mark Stavnes MStavnes@sandc.com		Approved 2000	PAR for revision applied for
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 j.g.leach@ieee.org		Approved 2005	No activity
C37.48.1	Guide for the Operation, Classification, Application, and Coordination of Current-Limiting Fuses with Rated Voltages 1-38kV	HVF	John Leach j.g.leach@ieee.org		Approved 2002 R2008	Reaffirmation approved 3/27/2008