

## IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuse Subcommittee  
Place: Calgary, Canada  
Date: October 15<sup>th</sup>, 2008  
Presiding officer: John Leach - Chair  
Recorder: John Leach

### MEMBERS PRESENT

G. Haynes ABB Inc.  
J. G. Leach Consultant - Hi-Tech Fuses

### MEMBERS ABSENT

J. G. Angelis\* Consultant  
G. Borchardt S & C Electric Company  
R. L. Capra Consultant  
F. Calderon AC Electric Systems  
H. E. Foelker\* Central Power & Light  
S. P. Hassler\* Cooper Power Systems  
F. Ladonne\* Underwriters Laboratories  
J. R. Marek Consultant  
F. J. Muench Cooper Power Systems  
D. Parker Alabama Power  
T. E. Royster\* Dominion Virginia Power  
R. N. Parry Cutler Hammer  
R. Ranjan\* Consultant  
J. S. Schaffer\* G & W Electric Co.  
M. Stavnes S & C Electric  
J. Zawadzki Powertech Labs Inc.

\* Correspondence Only

### GUESTS

Dan Gardner T&B – Hi-Tech

- 1. Call meeting to order** – the meeting began at 3:45 AM.
- 2. Member/guest introduction** - Members and guests introduced themselves. *The chair noted that due to the meeting being changed, without his knowledge, to conflict with the RODE sub-committee meeting, many members were unable to attend.*
- 3. Roster check** - Membership changes:  
Ron Beard has resigned as correspondence member from the subcommittee and working groups. The subcommittee expressed thanks for his long years of service, including his years as sub-committee chair. Regrets were received from Don Parker, due to his wife's illness, Jim Marek, Frank Muench, Alan Yerges, Mark Stavnes, and Frank Ladonne. Due to lack of HV fuse activity at UL, Frank can no longer attend our meetings, and has requested status of correspondence member. This has been granted.
- 4. The IEEE Patent Policy** - The patent/inappropriate topics slides were reviewed.
- 5. Approval of May 21<sup>st</sup>, 2008 minutes** – minutes were approved without change.

**6. Report from the chair** - There was no ADSCOM Report as ADSCOM had not yet met.

**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:** In the absence of Mark Stavnes (caused by the later than usual meeting date) John Leach reported that 6 members and 6 guests were present at the Tuesday morning meeting.

- C37.43 has been published
- C37.42 the PAR revision has been submitted and will be reviewed by NesCom October 24<sup>th</sup>. The Balloting Pool has been formed and has 60 individuals. Additional comments received on draft 8 were incorporated into draft 9. It will be balloted as soon as possible.
- C37.46 Draft 1 was circulated and comments were incorporated into Draft 2.
- C37.47 Draft 2 was circulated and comments were incorporated into Draft 2.
- Permission from the sub-committee to request PARs for these documents was requested and granted.
- New business: The second half of the session was spent viewing and discussing the presentation by Frank Lambert (NEETRAC) concerning their test program for polymer insulators and their proposal for additional test requirements to be added to C37.41. Specifically:
  - a) Add requirements for Water Penetration Test
  - b) Add requirements for UV Weathering and Tracking and Erosion
  - c) Consider Mechanical Pre-conditioning prior to performing Interruption tests

**b) Revision of Fuse Standards:** John Leach reported that the group met on the morning of October 15<sup>th</sup> with 6 members and 4 guests. John reported that the Standards Board approved the revised PAR for PC37.41, and extended it until 2009. A second recirculation of PC37.41 proved necessary, but it resulted in only one sustained negative. The negative was related primarily to our non-adoption of C37.100.1 clauses throughout the standard, based on our contention that fuse requirements are not sufficiently common with other switchgear requirements to warrant its use (a fact recognized by those who developed C37.100.1 but not by one member of the Switchgear committee). RevCom will review the proposed standard on October 27<sup>th</sup>.

John reported that C37.40 has been submitted for a re-affirmation ballot and the balloting group has been formed.

John Leach reported that the next task of the WG was to revise C37.48.1 that has been re-affirmed but contains several identified errors. He discussed the comprehensive IEC fuse application guide under development and stated that there were at least three options open to the group:

1. Correct C37.48.1 making the minimum changes necessary to match C37.48 and the identified issues.
2. Make the changes in 1 but more extensively re-write the document to reflect current thinking and improve coverage of applications.
3. Expand the tutorial to include expulsion fuse applications, in the same way that IEC is doing.

In the discussion that followed, the suggestion was made to make the minimum corrections necessary to address issues raised during the re-affirmation, plus other known problems, and then monitor the progress of the IEC “user’s guide” with a view to adopting it, either complete or with in-country modifications, when it is completed (3-5 years). This course of action was agreed to by consensus. Permission from the sub-committee to request a PAR for C38.48.1 was requested and granted.

**9. Report of liaison to other committees**

a. ER&P Committee – J. G. Leach

Awards – we are encouraged to make suggestions for awards, as no nominations have been forthcoming for some IEEE awards. Various proposals for switchgear and PES level awards were made. I proposed Ron Beard for Switchgear committee Honorary Member status, and this was accepted. We were encouraged to have our members to consider CIGRE working groups.

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

See the attached IEC report (Attachment A).

**11. Unfinished business**

- a. **C37.4X consolidation** – This continues to be the goal of the sub-committee after all NEMA documents have been converted to IEEE format.

**12. New business**

- a. **NEETRAC Report** – See RFSS Report.

**13. Next meeting** – May 6<sup>th</sup> 2009 Ashville, NC. (Ashville Renaissance Hotel), Fall 2009 Denver

**14. Adjournment** took place at 3:55 PM.

Respectfully Submitted, John Leach, Chair, 10-15-08

## **Attachment A**

### **IEC Report 2008-2, October 2008**

From: Dr. John G. Leach, Technical Advisor SC32A, October 13<sup>th</sup> 2008

#### **IEC actions since May 2008:**

A meeting of MT3 and AHG1 (Ad Hoc group on fuse application guide) took place in Arnhem, The Netherlands, on September 16<sup>th</sup> and 17<sup>th</sup> 2008. John Leach attended these meetings.

#### **MT3 meeting**

The draft CDV for the changes (to correct Central Office publishing errors) to IEC 60282-1 CL Fuses was finalized. The CDV has now been circulated. Because CO would not authorize a consolidated version, the CDV is a list of changes, and this makes the whole document virtually unusable. Members were urged to petition their National Committees to insist that a consolidated version be produced once the CDV/FDIS have been approved.

A CDV for IEC 60644 Ed. 2.0: Specification for high-voltage fuse-link for motor circuit applications was prepared using the comments to the CD plus additional corrections figure 3.

John Leach and Phil Rosen gave an account of the history that led up to the circulation of a draft document ("AppGuide-03.doc") to the AHG1 and MT3 members (formulated by the MT3 editing group).

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

#### **AHG1 meeting**

The AHG1 met and discussed the circulated documents. General agreement was reached on the need for a comprehensive application guide for CL and expulsion fuses. While there was a minority opinion for a simple guide, the group agreed to proceed approximately along the lines of the proposals from the MT3 editing group. Attempts are to be made to reduce its size to less than 100 pages (the proposal was approximately 120 pages, and still needed additional minor sections). Tasks were assigned and John Leach agreed to continue to be the document editor and assembler. The aim is to circulate a new version by December 1<sup>st</sup>, in time for review and revision before the next AHG1 meeting.

The next AHG1 meeting will be in Paris, March 24<sup>th</sup> and 25<sup>th</sup>. The final proposal to the Subcommittee must be circulated by mid June 2009, and discussed at the IEC General Meeting October 18<sup>th</sup> – 22<sup>nd</sup> 2009, in Tel Aviv, Israel.

John Leach, 10-23-08

## Attachment B Project Status

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	<b>NEEDS ACTION BY 12/2008</b> Balloting group being formed for October re-affirmation
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	2003	Approved 2000	PAR revised and extended to 2009 Draft submitted to RevCom - on October agenda.
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
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	
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	
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	
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	
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	

### Current HVF Subcommittee members:

G. R. Borchardt, F. Calderon, R. L. Capra, G. Haynes, J. G. Leach, J. R. Marek, F. J. Muench, R. N. Parry, M. Stavnes, J. Zawadzki

Corresponding members

J.G. Angelis, H. E. Foelker, S. P. Hassler, F. G. Ladonne, R. Ranjan, T. E. Royster, J. S Schaffer