

## IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuses Subcommittee  
Place: Pittsburgh, PA  
Date: Wednesday, October 12, 2016  
Presiding officer: Alan Yerges – Secretary/Vice-Chair  
Recorder: Alan Yerges – Secretary/Vice-Chair

### MEMBERS PRESENT

Sterlin Cochran	Hubbell Power
Gary Haynes	ABB Inc.
Chris Lettow	S&C Electric Company
Sean Moody	Mersen
T. E. Royster	Dominion Virginia Power
Jon Spencer	ABB-Thomas Betts/Hi-Tech
Jim Wenzel	Eaton
Alan Yerges	Eaton

### MEMBERS ABSENT

Glenn Borchardt	S & C Electric Company
Jonathan Deverick	Dominion Virginia Power
Mark Stavnes	S & C Electric
Charles Worthington	Hubbell Power
Frank Lambert	NEETRAC
John Leach	Consultant - T&B/Hi-Tech Fuses/ABB

^ correspondence only

### GUESTS

Chris Borck	Eaton
Casey Daren	T&B (Hi-Tech)
Blake Henard	Hubbell Power
Brad Lewis	AEP
Bobby Moorhead	Dominion

### HONORARY MEMBERS

John Angelis, L. Ron Beard, Ray Capra, Steve Hassler, Frank Ladonne, Herb Pflanz, R (Kris) Ranjan, John Schaffer, Frank Muench, Don Parker, Jan Zawadzki. R. Neville Parry, J. R. Marek

1. **Call meeting to order** - at 1:30 PM
2. **Approval of Agenda** – No changes requested, agenda accepted.
3. **Member/guest introduction** – 8 members, 6 guests. No request for new membership to subcommittee.
4. **Roster check–**
  - a. Roster circulated for correction.

- b. Thanks to Dan Gardner for his service. Dan has resigned from the subcommittee, due to a change of job.
- c. Moving Neville Parry to Honorary Status.

**5. Approval of April, 2016 minutes – Approved.**

**6. Report from the Chair:** Summary of C37.4X documents status was reviewed.

**7. Standards Document Status Report: (see Annex B)**

- a. PAR for C37.41 and C37.42: documents have been balloted and are on track to be revised by the end of 2016.
- b. PAR for C37.45: final draft has been submitted to RevCom.

**8. Working Group Reports**

**a) Revision of Fuse Standards – A. Yerges**

- a. The Working Group met on October 12<sup>th</sup>, 2016 at 8am with 12 members and 9 guests present. There was no request for new membership.
- b. An update was provided on the status of C37.41 and C37.42. Both documents were recently re-balloted and approved. They are currently with IEEE for editorial review. There is an expectation of issuance by near the end of 2016.
- c. C37.45 has also been previously approved and should be issuing soon.

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

- a) ER&P Committee – Alan Yerges** reported that the ER&P committee met at 12:00 pm on October 12<sup>th</sup>. Various proposals for both honorary membership and standards award recipients were discussed (but this information remains secret until awards are made). There is a continued effort to advertise the need for technical papers.

**10. IEC Report – Sterlin Cochran:** (for full report see Annex A)

- a. Significant discussion around the perception of interest in IEC for polymer cutout inclusion, and the need to segregate as a separate standard.
- b. The general agreement was that it would be difficult and non-constructive to maintain a separate IEC document to only cover polymer cutouts.

**11. Unfinished business**

- a. Chris Lettow highlighted for future consideration the potential benefit of separating expulsion fuse and current-limiting fuse specifications. There was a brief review of decisions that were made in the current working group to reject that idea, but that this may be reconsidered in the future with the complexity of standards consolidation now completed.

**12. New business**

- a. Working Group chair vote was taken for the upcoming PAR. John Leach was unanimously voted by all 8 members present. (confirmed quorum)
- b. A PAR will be submitted by the end of the year to combine C37.48 and C37.48.1. The focus is on title and scope. This was discussed in preparation during the HV Standards WG meeting.
  - 1. Title: The proposed standard title is 'Guide and Tutorial for the Application of HV (>1000 V) Fuses and Accessories'.
    - a. This utilizes the IEEE template of starting the title with the use of 'Guide...', allows for the scope to include both activities from C37.48 and C37.48.1, but would require

the allowance from IEEE to add the wording 'and Tutorial' between 'Guide' and 'for'.

## 2. Scope

1. It was decided to keep the scope focused on fuses and fuse accessories.
2. Removal of 'Enclosed single-pole air switches' in C37.48 was endorsed as there is little reference beyond the title and scope today.
3. The working group generally agreed that we wish to have a general scope, like in IEC.
4. There was not a lot of support for creating a dual-logo standard with IEC, but general endorsement of alignment on relevant terminology.

## 13. Next meetings:

Spring 2017 (23 - 27 April), Hilton Charlotte University, Charlotte, NC, USA

Fall 2017 (October 8-13) Marriott Portland Sable Oaks, Portland, ME

Spring 2018 (April 22-27) Disney's Contemporary Resort, Lake Buena Vista, FL

Fall 2018 – TBD

Spring 2019 (April 28-May 1) Hilton, Burlington, VT

Fall 2019 (Oct 6-10) Catamaran Resort, San Diego, CA

## 14. Adjournment – 2:00PM

### Annex A: IEC report

# SC32A - U.S.A. Technical Advisory Group

Dr. John G. Leach, Technical Advisor ♦ [j.g.leach@ieee.org](mailto:j.g.leach@ieee.org) ♦ 828-256-3744 ♦ Fax 828-322-2376

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## IEC Report 2016-2 April 2016 to October 3<sup>rd</sup> 2016

From: Dr. John G. Leach, Technical Advisor SC32A, October 3<sup>rd</sup> 2016

### Summary

Since the April 2016 report there have been no meetings of MT3, but significant work has been done in preparation for the 80<sup>th</sup> General Meeting in Frankfurt, Germany, October 10<sup>th</sup> – 14<sup>th</sup> 2016, including a submission of a New Work Item proposal (NWIP) by the US National Committee (32A/319/NP).

### Report of activities

#### a) Viability of TC 32 (Fuses) and SC32A (HV Fuses)

For some time, the Standards management Board (SMB) of IEC has expressed concerns over Technical Committees and Subcommittees (TC/SCs) that they consider have insufficient activity. They therefore chose five metrics, to assess "low activity", and threatened that, if a group meets three or more criteria, they would be deemed to have insufficient activity and would be absorbed into other groups. The five criteria considered were:



- Number of active projects less than or equal to 5
- Number of NP in the last three years equal 0 (NP are New Projects initiated through a NWIP)
- Number of publications less than or equal to 5
- Number of experts less than or equal to 10
- Number of meetings in last 5 years less than or equal to 1

Both TC 32 and SC32A were on the list of non-conforming groups, but at their meeting on June 14<sup>th</sup>, the SMB decided that TC 32 would continue as the parent body of the subcommittees, but that since SC32A did not meet the first three criteria, unless corrective action was taken before the end of 2016, in February 2017 the Maintenance teams of SC32A would be merged into TC32 and SC32A would be eliminated. This would mean that we would have no dedicated Chair or secretary, but would rely on a consensus that would include low voltage and miniature fuse representatives to decide on our future work.

Consequentially, the elimination of SC32A was considered undesirable by most of the interested parties in SC32A. A plan was therefore proposed to remedy the situation both before the end of the year and in the longer term. Since it would be impossible to achieve at least 6 active projects or a new publication by the end of the year, our only possibility would be to initiate an NP. Traditionally, in SC32A new projects have been started by circulating an informative document (INF) to national Committees (NC) before a Plenary meeting (a meeting where the SC meets and makes decisions). At the Plenary, the SC makes a decision to initiate a project, and the minutes are all that is necessary for its launch and timetable. This method of creating an active project does not count as an NP however! Therefore our plan to launch a project in Frankfurt to revise 60282-1 counts as an active project but not an NP! Since the IEEE have developed testing requirements for expulsion fuses using cutout type fuse supports that utilize polymer insulators, it was felt that this could be adopted by IEC as a new standard. This would give us an immediate NP, and if adopted as a separate standard, give us 6 documents, eliminating both the third and second criteria for being “non-active”.

The US NC has submitted a NWIP to IEC for a new standard “Additional testing requirements for high-voltage expulsion fuses utilizing polymeric insulators” with a scope “This standard covers additional testing requirements for expulsion fuses that use a cutout type fuse-base (cutout fuse support) that uses polymer insulators i.e. a fuse-base that uses an insulator or insulators having a single point mounting bracket, generally located centrally between the terminals that are mounted at each end of the insulator(s). The additional testing covers mechanical tests, environmental tests (weathering, tracking, and erosion), water penetration and void tests, and interrupting tests at temperature extremes.” It would be done by a new Working Group under the leadership of Sterlin Cochran. We require a simple majority of NCs to agree to the project, and at least 4 NCs to nominate experts to the WG.

It was hoped that we could get IEEE copyright permission to use the text of Clause 18 from the new C37.41. However the standard had not been approved at the time we needed to send in the NWIP, so this was not possible (it has since been approved by IEEE). Instead a summary of Clause 18 was used as the attachment to the NWIP. The US proposal was circulated as 32A/319/NP with an opening date of 2016-09-30 and a closing date of 2016-12-23.

In view of the need for 6 documents, the intention of combining 60644 (motor circuit fuses) with the revision of 60282-1 has been dropped, as most members think a viable subcommittee is more important.

b) MT3 (current-limiting fuses)

As was reported in April, the convenor of MT3, Norbert Stein suffered a stroke in April 2015 and has declined re-appointment (all convenors have to be appointed/reappointed in October). John Leach has been acting convenor since Norbert’s indisposition. A new convenor both for MT3 and MT6 (user guide) is required and NCs were invited to submit names. The USNC has

submitted John's name. As of last week, no other names have been submitted, but names could be proposed before or at the General Meeting.

A revision of 60282-1 has been circulated to MT3 members that contains virtually all of the proposed changes. If the project is launched in October, a CD will need to be circulated before the end of the year. The latest draft includes treatment of current carrying capability of fuses in enclosures along the lines of what is in the new C37.41. Whether this will be acceptable by MT members remains to be seen!

c) MT7 (user guide)

No activity has occurred in IEC in this area. However since it is the intention of IEEE to adopt TR 62655 as a replacement for C37.48 and C37.48.1, IEEE have succeeded in obtaining copyright permission from IEC to do this. IEC and IEEE would like to see a joint development take place to produce a Dual Logo document. Unfortunately the timing is against this. IEEE need a new standard by 2020 (when C37.48 expires). The document to replace it needs to reflect the proposed changes in IEC 60282-1 (which should acknowledge the different testing required for Series II voltages that are based on North American voltages and practices). These same changes need to be made to TR 62655, but a formal project and circulation of a CD cannot occur until the revision of 60282-1 is complete (also 2020). It is hoped that after 2020 a dual logo standard of the tutorial and application guide may be possible.

d) The Chair of SC32A, Mariusz Wilniewczyc, had (somewhat reluctantly) agreed to continue as Chair until 2017-11-13 after NCs could not agree on the proposal that Roy Ball take over in 2014 (Roy had not attended any IEC meetings and knew very little about HV fuses – it may be noted that he subsequently left the fuse area). However, Mariusz has now resigned, effective November 4<sup>th</sup> 2016. National Committees have been invited to submit nominations by November 4<sup>th</sup> for someone to replace him. The situation will be assessed during the plenary meetings.

**Date and place of next meeting:** Our next MT3 meeting will be in Frankfurt Germany on Friday October 14<sup>th</sup>, 2016, during the 80<sup>th</sup> General meeting of the IEC.

John Leach, 10/03/16

Annex B: Document Status - September 2016

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			Approved 2003 R2009	None - Combined with C37.41 TO BE WITHDRAWN
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 2016	
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	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2016	
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			Approved 2008	None –Combined with C37.42 TO BE WITHDRAWN
C37.45	Standard Specifications for High-Voltage Distribution Class Enclosed Single-Pole Air Switches with Rated Voltages from 1kV through 8.3kV	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2016	
C37.46	Standard for High-Voltage (>1000 V) Expulsion and Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches.	HVF			Approved 2010	None - Combined with C37.42 TO BE WITHDRAWN
C37.47	Standard Specifications for High-Voltage (>1000 V) Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches	HVF			Approved 2011	None - Combined with C37.42 TO BE WITHDRAWN
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	Revision started - Good to 2020 PAR to combine C37.48 and C37.48.1 with IEC/TR 62655 to be sought in 2016
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 activity