IEEE SWITCHGEAR COMMITTEE CORRESPONDANCE

Minutes:	IEEE High-Voltage Fuses Subcommittee
Place:	On-line
Date:	Wednesday, October 7th 2020
Presiding officer:	Jim Wenzel – Chair
Recorder:	John Leach – Vice-Chair/Secretary

MEMBERS PRESENT

John Angelis	Honorary Member
Glenn Borchardt	S and C
Chris Borck	Eaton
Sterlin Cochran	Oak and Shield LLC (Chair RFSWG)
Gary Haynes	ABB Inc.
John Leach	Consultant (Sec.)
Chris Morton	PowerTech
Jon Spencer	Utility Solutions
Jim Wenzel	Eaton (Chair)
Robert Wolf	Hubbell Power Systems

MEMBERS ABSENT

Bobby Moorhead	Dominion
Rodolfo Elizondo	Peak Demand
Jonathan Deverick^	Dominion Virginia Power
Randy Ward	Aluma-Form
Charles Worthington	Hubbell Power

^ correspondence only

GUESTS

Joshua Arlund	MacLean Power Systems
Brian Betts	Mersen
Jeramie Cooper	Eaton
Rich Frye	Eaton
Hemanth Jala	S&C Electric Co
Travis Johnson	Xcel Energy
Pete Marzec	S&C Electric
Caryn Riley	GT/NEETRAC
Donnie Swing	Powell Industries
Emily Witcher	Hubbell Power Systems
Danish Zia	UL LLC

HONORARY MEMBERS

John Angelis, L. Ron Beard, Glenn Borchardt, Ray Capra, Steve Hassler, Frank Ladonne, Chris Lettow, Jim Marek, Frank Muench, Don Parker, R. Neville Parry, Herb Pflanz, R (Kris) Ranjan, Tim Royster, John Schaffer, Mark Stavnes, Alan Yerges, Jan Zawadzki.

1. **Call meeting to order** - 1:30 pm (Central DS time)

2. **Approval of Agenda** – Proposed John Leach, seconded Jon Spencer, approved.
3. **Member/guest introduction –** After our last meeting, Robert Wolf became eligible for membership, and is welcomed to the Sub-Committee.

   There were therefore 10 members present, with 5 members not in attendance and 11 guests.
4. **Roster check –** Robert Wolf is added to the roster. Other guests will be eligible for membership after this meeting.
5. **Approval of October 9th 2019 minutes –** There were no corrections to the last meeting minutes and they were approved as circulated.
6. **Standards status report**
   a. C37.40: superseded by C37.41-2016 and now shown as superseded in IEEE "shop".
   b. C37.41: published April 2017, Corrigenda issued May 2017. **New PAR** for it to be combined with C37.42-2016, approved March 2020, expires Dec 2024.
   c. C37.42: published May 2017.
   d. C37.45: Published April 2017.
   e. C37.48: New revision published **August 2020**.
   f. C37.48.1: This document has been Incorporated into the revision of C37.48, in accordance with its PAR, and so is now **obsolete**. However, it is still shown as active by IEEE. **An attempt will be made to declare it superseded**.
7. **Working Group Reports -**
   a. Revision of Fuse Standards – C37.48: John Leach

      John reported that the revised standard was published in August 2020 and members were given the opportunity to download a complimentary copy. Since the work of the group is complete, a request was made for it to be disbanded. SC Chair Jim Wenzel declared the group to be disbanded with the Subcommittee's thanks.
   b. Revision of fuse standards – C37.41: Sterlin Cochran

      Sterlin reported that the first meeting of the new WG was held at 8:00 am on October 7th (on-line). Twenty-two people were present and all have become members of the group. A PAR for the working group was obtained on March 5th 2020 (expiring December 31st 2024). The purpose of the WG is to combine the testing requirements of C37.41 with the specification requirements of C37.42 into one "user friendly" document. A first draft document, conflating the two standards, had been produced and several items, covering both fundamental issues and specific changes were discussed. One item considered particularly important is the improvement of the testing tables for expulsion fuses, as with the corrigendum to C37.41 this has become very difficult to understand. Various parts of the combined document have been assigned to WG members for additional study before our next meeting.
8. **Report of liaison to other committees -**
   a. ER&P Committee – J. Wenzel
      1. There was no meeting.
9. **IEC Report – J. Leach – (full report Annex A)**

a. Since the May 2020 report there have been two TC 32 AHG-2 on-line meetings. This group is for the study of items of common, or overlapping, interest to the High-Voltage SC32A and the Low-Voltage SC32B. See the Annex for more details.

b. The TC32 Chair's Advisory Group will meet on-line October 27th to decide whether to hold the proposed Plenary meeting in Paris in January. However, it is likely that this will be postponed again or changed to an on-line meeting. On-line meetings, involving most time-zones around the world, pose a particular challenge.

10. **Unfinished business –** none

11. **New business** – Sterlin Cochran reported that the Technology and Innovation Committee has formed task forces to cover three areas. These are:

    1. Influence of renewables on switchgear (will focus on part 1: Open gap 200% power frequency testing)
    2. Special switchgear applications, not covered in the standards
    3. Issue of aging equipment (end of life, diagnostics)

    They are interested in recruiting members for #2 (one from each subcommittee) and someone to lead #3. Please contact Sterlin or John Leach if you would like to help (or know someone who might want to).

12. **Future meetings -**

    Spring 2021 (April 18th – 23rd) Hilton Charlotte University Place, Charlotte, NC

    Fall 2021 (October 10-14) Peppermill Resort, Reno, NV

13. **Adjournment - 2:30 pm**

Submitted by John Leach, 10/21/2020

Annex A

SC32A - U.S.A. Technical Advisory Group

Dr. John G. Leach, Technical Advisor ◆ j.g.leach@ieee.org ◆ 828-256-3744

IEC Report 2020-2 May 2020 to October 2020

From: Dr. John G. Leach, Technical Advisor TC32 and SC32A, October 5th 2020

Summary

Since the May 2020 report there have been no SC32A maintenance team meetings, but on-line meetings of TC32 AHG-2 (Ad Hoc Group 2) on June 3rd, and July 27th. Preliminary plans for the replacement TC/SC/MT meetings in Paris, January 11th -15th 2021, will be discussed at the on-line CAG meeting, now set for October 27th 2020.

MT3 – HV Current-limiting fuses It is with sadness I have to report that long time (26 years) convenor of this group, Norbert Stein died in early June. Norbert was active in IEC for over 40 years, until ill health forced his retirement from IEC activities in 2015.

WG8 – "Polymeric cutout standard"
The new standard was published on April 16th, 2020. For work on this document the Convenor, Sterlin Cochran, received the IEC 1906 award. This award (named for the year of IEC's founding) is given to IEC experts around the world "whose work is fundamental to the IEC". The criterion goes on to say "The Award also recognizes exceptional and recent achievement - a project or other specific contribution - related to the activities of the IEC and which contributes in a significant way to advancing the work of the Commission." This is only the third 1906 award for SC32A in at least 25 years (the other two were to Stein and Leach for the Tutorial/application guide IEC 62655).

MT6 – "Tutorial and Application Guide"
A formal project for the revision of IEC TR 62655 has not yet been started. It was planned that this would occur at the Plenary meeting in Paris in September 2020. If a January meeting can take place instead (in person or remote), a future work plan may be instituted at that time, although with little progress possible without face-to-face meetings, it may be delayed.

TC 32 AHG-2 web meetings, June 3rd, and July 27th, 2020. This group met to discuss overlapping interests of SC32A and SC32B.

There are two main issues involving "overlap". The first is d.c. voltages above the limit presently specified for SC32B (1 500 V). Although SC32A does not consider any d.c. fuses, it has been agreed that fuses with voltages higher than 1 500 V d.c. will be covered by TC32/WG1, made up of members from SC32A and SC32B.

The second issue is that of fuses above 1000 V ac, but that have been tested to LV fuse standards. This is actually permissible under the present scopes due to the slightly odd phrase in the scope of SC32B "….to be used at nominal voltages not exceeding 1 000 V a.c. or 1 500 V d.c. and also, in so far as they are applicable, for circuits of higher nominal voltages:" (my emphasis). It can also be noted that, at the moment, while "high-voltage" is used in the scope of SC32A, it was not "defined" as being over 1000 V, except in our actual standards. SC32B does not use "low-voltage" in its scope but specifies the voltages as seen above.

The conclusion was that there should be a new TC32 working group, to develop a standard for such fuses. It is proposed that the scopes of SC 32A and SC 32B will be changed to add "greater than 1000V" to the SC32A scope, and remove the dubious wording, underlined above, from SC32B.

Date and place of next meetings: Proposed January 11th – 15th 2021 in Paris. With the present state of COVID-19 in Europe, it is possible that this meeting will be replaced with an on-line meeting, and a request be made for us to attend the General Meeting in 2022 (San Francisco, USA, October 2022).

John Leach, 10/21/20