

SWITCHGEAR ASSEMBLIES SUBCOMMITTEE SA S/C
MINUTES OF THE SPRING 2022 MEETING
Hilton Lake Champlain, Hilton, VT
Wednesday, 1:30-3:15 PM, October 19, 2022

The meeting was called to order by SA S/C Chair, D. Moser, at 1:37 PM on October 19, 2022:

Attendance

- Members: 31 of 39 members present – Quorum was met.
- Guests: 32
- Total: 63

Attendance list is recorded at the end of the meeting minutes.

1. Introduction of Members and Guests

Members and guests introduced as recorded below.

2. Reviewed IEEE Patent, Copyright slides, and reminder against commercial topics

Verbal call for any issues– none identified.

3. Approval of Meeting Agenda

The Fall 2022 agenda was presented for review.
Motion to approve by R. Hartzel, Second by D. Swing
Motion approved by unanimous consent.

4. Approval of SA S/C Meeting Minutes

[S22SAmiREV0.pdf \(ieee.org\)](#)

Minutes (link above) from the Spring 2022 meeting were posted on-line.
Motion to approve meeting minutes by K. Flowers, Second by M. Valdes.
Motion approved by unanimous consent.

5. Working Group, Task Force, Study Group & Ad Hoc Status Reports

- a. C37.20.1 - IEEE Standard for Metal-Enclosed Low-Voltage (1000 Vac and below, 3200 Vdc and below) Power Circuit Breaker Switchgear**
Mike Lafond: Meeting minutes are provided. Verbal update of WG activities.

WG met with a quorum. Draft 4 comments reviewed with good progress. Ad-hoc formed to review 6.2.5 and 6.2.6 test clauses for recommendation at the spring meeting. Current WG secretary is stepping down. R. Burns (Eaton) volunteered to be the WG secretary. Chair has not submitted revised PAR to denote the use of copyright material from external and internal IEEE documents.

J. Santulli (IEEE Program Coordinator) confirmed that there is no requirement to update an already approved PAR to add the use of either internal or external copyright material. WG's do need to follow copyright approval process for all material to be used from either internal or external IEEE documents.

WG chair will be reviewing current member roster for active participation to ensure future meetings can maintain a quorum. Revised PAR submission no longer required.

PAR expires 12-31-2024. Documents posted in iMeet Central.

Actions for SA S/C Chair: No further action required.

- b. C37.20.2 - IEEE Standard for Metal-Clad Switchgear:**
Michael Wactor: Minutes are provided. Verbal update of WG activities.

No WG meeting. Document approved on 9/22/2022 by the board. Award certification requests submitted. Publication of document should occur prior to end of the year. WG chair motions to disband the WG. Motion approved by unanimous consent.

Actions for SA S/C Chair: Congratulations and many thanks to the WG.

- c. C37.20.3 - IEEE Standard for Metal-Enclosed Interrupter Switchgear (1 kV-48.3 kV)**
Ron Hartzel: Minutes are provided. Verbal update of WG activities.

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WG met with quorum. Virtual meeting held since the Spring meeting. Approximately ½ of the comments reviewed. Additional virtual meetings targeted. PAR extension submitted for approval.

Actions for SA S/C Chair: No further action required.

- d. C37.20.4 - IEEE Standard for Indoor AC Switches (1 kV-52 kV) for Use in Metal-Enclosed Switchgear**

Bob Cohn: Minutes are provided. Verbal update of WG activities.

WG met with quorum. Some technical issues under review such as independent and dependent mechanisms. Request for internal IEEE copyright material being submitted. WG targeting a ballot by the Spring meeting.

PAR expires in Dec 2023

Actions for SA S/C Chair: No further action required.

- e. C37.20.6 - IEEE Standard for 4.76 kV to 48.3 kV Rated Ground and Test Devices Used in Enclosures**

Ron Hartzel: Minutes are provided. Verbal update of WG activities.

WG met and did not meet quorum. Chair will review membership. Virtual vote to approve the effort at this meeting. 3 ad-hoc groups formed to address various sections of the document.

Actions for SA S/C Chair: No further action required.

- f. C37.20.7 - IEEE Guide for Testing Switchgear Rated Up to 52 kV for Internal Arcing Faults**

Dan Hrcncir: Minutes are provided. Verbal update of WG activities.

WG met with quorum. 3 ad-hoc groups completed their work and document updated. Targeting to circulate draft 4a via email with a request for comments by the end of November with a virtual meeting to review these comments prior to the next meeting virtually. Targeting to move toward a ballot prior to the Spring meeting with an electronic vote in the WG and at the S/C to proceed to balloting.

Actions for SA S/C Chair: No further action required.

- g. C37.20.9 - IEEE Standard for Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems**

T. Woodyard: Minutes are provided. Verbal update of PAR Study Group activities.

PAR Study group formed during virtual SA S/C vote and develop a recommendation for an amendment PAR revision. Revised amendment PAR request shared during meeting and attached to these meeting minutes. Motion by T. Woodyard to request permission to submit revised amendment PAR request. Motion approved by unanimous consent.

Actions for the SA S/C Chair: No further action required.

- h. C37.20.10 - IEEE Standard for Definitions for AC (52 kV and Below) and DC (3.2 kV and Below) Switchgear Assemblies**

Dan Delfino: Minutes are provided. Verbal update of WG activities

WG met with quorum. New WG Secretary appointed. WG reviewed comments received to date. WG found some inconsistent use of the terms drawout, removeable and withdrawable across some SA documents and requests that other active WG chairs please consider reviewing their documents for alignment to C37.20.10 definitions where applicable and if not be sure to define their unique definitions in their draft documents. Definition of safe distance being worked on. Targeting to be ready for potential ballot by Spring meeting.

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Actions for SA S/C Chair: No further action required.

- i. **C37.21** - IEEE Standard for Control Switchboards
Chris Thomas: Minutes are provided. Verbal update of PAR Study group activities

PAR Study group recommend a revision PAR of the document. PAR shared during the meeting and a copy attached to these meeting minutes. Motion by C. Thomas to request approval to submit the PAR. Motion approved by unanimous consent.

Actions for SA S/C Chair: No further action required.
- j. **C37.23** - IEEE Standard for Metal Enclosed Bus
Jared Hines: Minutes are provided. Verbal update of WG activities.

WG met with quorum. WG reviewed proposals for an annex which will be circulated with the next draft. Internal IEEE copyright approval will be created and submitted for approval.

Actions for SA S/C Chair: No further action required.
- k. **C37.24** - IEEE Guide for Evaluating the Effect of Solar Radiation on Outdoor Metal-Enclosed Switchgear
Terry Woodyard: Minutes are provided. Verbal update of WG activities.

WG met with quorum. WG off to a good start and expecting to continue in the Spring meeting.

Actions for SA S/C Chair: No further action required.
- l. **C37.122.2** - IEEE Draft Guide for the Application of Gas Insulated Substations 1 kV to 52 kV (This is an ADSCOM document of interest to SA S/C members)
T. Woodyard: Minutes to be provided to ADSCOM. Verbal update of WG activities

T. Woodyard communicated the document was at RevCom and no further update at this time.

Actions for SA S/C Chair: No further action required.

6. Old Business

- a. **IEC Activities**
J. Webb: Verbal update of status.
J. Webb communicated that IEC 62271-200 (Metal-Enclosed & Metal-Clad Equipment) proposals are being reviewed at this time and will continue during the upcoming next meeting. IEC 62271-214 (Internal Arc Resistant Pole Mounted Equipment) are preparing results to push toward a final draft at the upcoming next meeting.

Actions for SA S/C Chair: No further action required.
- b. **ACS C37** – General Update
Keith Flowers: Verbal report of ACS C37 activities.

C37.50 and C37.51 are completed. C37.54 forming ballot and targeting Nov 3rd closing. C37.55 published. C37.57 nearing completion and will coordinate with latest version of C37.20.3.

Actions for SA S/C Chair: No further action required.

7. Membership

- a. **Senior Membership & Award for Young Professionals**
Darryl Moser encouraged all non-senior members to obtain senior membership status.
Senior Membership url:
http://www.ieee.org/membership_services/membership/senior/index.html

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b. Switchgear Assemblies S/C Membership

D. Moser: C. Thomas newest SA S/C member, we appreciate him for supporting and participating with C37.21 and C37.13.1 documents.

c. Main Committee Membership

D. Moser: New Main Committee member recommendations will be made by SA S/C to the Main Committee for consideration.

8. New Business

a. Start revisions to / seeking Working Group Chairs:

1. **C37.81** – Guide for Seismic Qualification of Class 1E Metal-Enclosed Power Switchgear Assemblies – R. Boyce has volunteered to lead
2. **C37.82** – IEEE Standard for the Qualification of Switchgear Assemblies for Class 1E Applications in Nuclear Power Generating Stations – R. Boyce has volunteered to lead

b. WG / Study Group Chairs – Required information

All 3 of the following need to be sent to the SA Subcommittee Secretary no later than Friday, November 11, 2022. darryl.moser@us.abb.com paul.b.sullivan@ieee.org

1. **SA Document Status** – Required action – WG – Document Status & Website Synopsis.
2. **WG Meeting Room Requests** – Update “SA Document Status” report

D. Moser: WG, Study Groups and Ad Hocs - Please confirm meeting room requirements with Paul Sullivan. Meeting room requests are circulated in SA Document status. Be sure that room requests include expected participant size and number of sessions.

3. Working Group Minutes

c. ADSCOM – Items for SA S/C Chair to discuss at ADSCOM meeting

1. Share IEEE guidance on PAR revision not required if either internal or external IEEE copyright material is to be used after a PAR has already been approved.
2. Share that C37.20.7 PAR to be revised to reflect a change from a guide to a recommended practice

d. Main Committee Meeting Items – Review items to be presented

Total: 14 documents

Active PAR's: 9 – C37.20.1, C37.20.2, C37.20.3, C37.20.4, C37.20.6, C37.20.7, C37.20.10, C37.23, C37.24

2022 Ballot Activity: 1 - C37.20.2

Upcoming PAR Activity: C37.20.7, C37.20.9, C37.21

Not Active: 3 - C37.81, C37.82, C37.121

e. New Document – Application guide for Arc Resistant Equipment

Marcelo Valdes: During C37.20.7 WG sessions it was realized that a great deal of application information resides in C37.20.7 and needs to be updated, much of this information would conflict with the scope of C37.20.7. Currently C37.20.7 is a testing guide and not an application document. M. Valdes motions to form an ad-hoc for a potential new document for the application of C37.20.7 internal arc res equipment. 2nd by M. Wactor.

General consensus to create the ad-hoc as recommended but to not delay nor change the current C37.20.7 WG PAR or activities.

SA S/C chair would like to have the ad-hoc to research where this document should reside such as ADSCOM, T&I, or which Subcommittee.

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Motion to form the ad-hoc from said motion approved. M. Valdes will lead the ad-hoc along with the following volunteers: M. Wactor, T. Woodyard, P. Barnhart, T. Hawkins, T. Burse, T. Neighbors, A. Livshitz, G. Sims, C. Thomas, M. Youssef, O. Parks, A. Lopez, F. Cozivc.

Actions for SA S/C Chair: No further action required.

f. C37.20.7 IEEE Document Type

Keith Flowers: With the wide acceptance in the industry and significant maturity of the current testing guide of C37.20.7 as the common method for testing internal arc resistant equipment, I would like to ask the S/C to consider if this is the correct time to change the document type to align with the IEEE document type of Recommended Practice versus its current designation as a Guide.

Open discussion and consensus to accept the designation of Recommended Practice and not Standard for C37.20.7.

K. Flowers motions to revise the current WG C37.20.7 PAR from a Guide to a Recommended Practice. 2nd by M. Wactor. Motion approved.

D. Hrcncir to submit revised PAR in alignment with approved motion.

g. Upcoming Meetings

1. Spring 2023: Clearwater, FL
2. Fall 2023: San Diego, CA
3. Spring 2024: TBD
4. Fall 2024: TBD
5. Spring 2025: TBD
6. Fall 2025: TBD

9. Adjourn

Meeting adjourned at approximately 3:16 PM.

Reported by:

Mike Lafond
Switchgear Assemblies Subcommittee Secretary (Interim)
October 19, 2022

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Attendance Record

First Name	Last Name	Company	Role	10/19/2022
Darryl	Moser	ABB	Chair	✓
Michael	Lafond	No affiliation	Secretary (Int.)	✓
Chris	Ambrose	Federal Pacific (Div. of Electro-Mechanical Corp.)	Member	✓
Paul	Barnhart	Underwriters Laboratories	Member	✓
Russell	Boyce	Eaton	Member	✓
Ted	Burse	Powell Industries, Inc	Member	✓
Clint	Carne	Schneider Electric	Member	✓
Alex	Cochran	No affiliation	Member	✓
Robert	Cohn	Powercon Corp.	Member	✓
Randall	Creach	Avail Switchgear Systems	Member	✓
Daniel	Delfino	ABB	Member	✓
Sergio	Flores	Schneider Electric Inc. USA	Member	✓
Keith	Flowers	Siemens Industry, Inc.	Member	✓
Dave	Gohil	Avail Switchgear Systems	Member	✓
Lou	Grahor	Eaton Corporation	Member	✓
Ronald	Hartzel	Eaton Corporation	Member	✓
Tom	Hawkins	Siemens Industry, Inc.	Member	✓
Jared	Hines	Eaton Corp.	Member	✓
Dan	Hrncir	Eaton	Member	✓
Rahul	Jain	S&C Electric Company	Member	✓
Albert	Livshitz	Qualus Corp.	Member	✓
Jeff	Mizener	Siemens Industry, Inc.	Member	✓
Terry	Neighbours	ABB Inc.	Member	✓
Mark	Roberson	Avail Bus Systems	Member	✓
Carl	Schneider	Schneider Electric	Member	✓
Garett	Sims	Eaton Corp.	Member	✓
Kevin	Sippel	Eaton Electric	Member	✓
Donald	Swing	Powell Industries	Member	✓
Christo	Thomas	Schneider Electric	Member	✓
Michael	Wactor	Powell Industries, Inc	Member	✓
Terrance	Woodyard	Siemens Industry Inc.	Member	✓
Koustubh	Ashtekar	JST Power Equipment	Guest	✓
Francis	Beauchemin	Hydro-Quebec	Guest	✓
Robert	Burns	Eaton	Guest	✓
Craig	Bryant	Duke Energy	Guest	✓
Sudarshan	Byreddy	Burns & McDonnell	Guest	✓

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First Name	Last Name	Company	Role	10/19/2022
Fiori	Coziuc	S&C	Guest	✓
Federico	Di Michele	CESI S.p.A.	Guest	✓
Arkadiusz (Erik)	Doroz	Eaton	Guest	✓
Peter	Glaesman	PCORE Electric Company, Inc.	Guest	✓
Robert	Hanna	JST Power Equipment	Guest	✓
Erin	Hardy	Eaton	Guest	✓
Nadia	Hasnaoui	GE	Guest	✓
Jason	Hollander	CHA Consulting, Inc.	Guest	✓
Andy	Keels	Keelectric Engineering PLLC	Guest	✓
J. Dakota	Leopard	Eaton	Guest	✓
Adrian	Lopez	Powell	Guest	✓
Kevin	McGlown	JST Power Equipment	Guest	✓
Ken	McKinney	UL	Guest	✓
Miklos	Orosz	Myers Controlled Power	Guest	✓
Sumitabha	Pal	Schneider Electric	Guest	✓
Owen	Parks	ABB	Guest	✓
Paul	Rakus	Eaton	Guest	✓
Rakesh	Ranjan	Esgee Technologies	Guest	✓
Jeffery	Ricker	SCHNEIDER ELECTRIC	Guest	✓
Wahaj	Saleem	Siemens	Guest	✓
Leonel	Santos	Schneider Electric	Guest	✓
Lokesh	Solanki	ABB	Guest	✓
Marcelo	Valdes	ABB	Guest	✓
Jonathan	Wear	JST Power Equipment	Guest	✓
John	Webb	ABB	Guest	✓
Mina	Youssef	Eaton Corporation	Guest	✓
Xin	Zhou	Eaton	Guest	✓