

**SWITCHGEAR ASSEMBLIES SUBCOMMITTEE
MINUTES OF THE FALL 2015 MEETING**

**Catamaran Resort Hotel, San Diego, CA USA
September 23, 2015**

The meeting was called to order by SA S/C Chair, D. Edwards, at 1:30 PM on September 23, 2015 with the introduction of the following members and guests:

Attendance

Members: 35 present, 7 absent – Quorum was met.

Guests: 30

Total: 65

Attendance is recorded at the end of the meeting minutes. Membership and attendance is recorded in the AMS system.

1. Introduction of Members and Guests

Members and guests introduced as recorded above.

2. Approval of Meeting Agenda

Revised fall 2015 agenda presented.

Agenda accepted without changes by the SA S/C.

3. Approval of SA Meeting Minutes

Link: <http://www.ewh.ieee.org/soc/pes/switchgear/minutes/2015-1/F15index.htm>

Minutes (link above) from the spring 2015 meeting in St. Pete Beach, FL were posted on-line.

Minutes accepted without changes by the SA S/C.

SA S/C Secretary Email address: mike.lafond@ieee.org

4. Working Group Status Reports

- a. C37.20.1 – Standard for Metal-Enclosed Low-Voltage (1000Vac and below, 3200Vdc and below) Power Circuit Breaker Switchgear**

T. Burse: No WG meetings held. Revised document published in June 2015.

I have been asked to attend the Traction Power Substation (TPS) upcoming meeting on or around October 20, 2015 in Baltimore, MD. I anticipate that this group may inquiry on how to proceed with an application guide for low-voltage DC traction power switchgear.

Historically, the effort to create such a document had existed in PC37.20.8 which was withdrawn and efforts to merge the low-voltage DC traction power switchgear applications into C37.20.1 document were not accomplished in the latest publication.

I request a course of action from this S/C on how to respond to the TPS group. Three potential options could be considered:

1. Open an amendment PAR for C37.20.1
2. Create a new joint owned document with SA S/C as primary sponsor
3. Allow the TPS S/C to sponsor and create their own document

D. Edwards: Not in favor of allowing TPS S/C creating their own standard which would conflict with our scope. A joint sponsorship or an annex to C37.20.1 are preferred options. A joint sponsorship will be more challenging than annex effort but both will require input from the TPS S/C to ensure a successful effort.

T. Olsen: A strong likelihood that product requirements will be created which would pose challenges if placed in an appendix.

T. Burse: This effort may include DC circuit breaker requirements which would impact LVSD scope. A resurrection of PC37.20.8 may be a better solution.

K. Flowers: Complicating the structure of C37.20.1 is not preferred. A controlled document with a focus on organizing these unique requirements would be a better solution.

T. Burse: Motion to propose to the TPS S/C a collaborative effort with SA S/C as primary sponsor for the creation of an application guide for DC Traction Power Switchgear if the TPS S/C initiates such a request, 2nd: D. Hrncir, Motion passed unanimously.

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D. Hrnrcir: What prevents another S/C from creating a document that impedes upon our scope?

T. Olsen: SA S/C members are monitoring these activities.

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

b. C37.20.7 – Guide for Testing Medium-Voltage Metal-Enclosed Switchgear for Internal Arcing Faults

M. Wactor: Minutes are provided.

M. Wactor: WG met on Tuesday (Sep 22) with 75 attendees which was a record. Almost entire WG members were present. WG reviewed all major items and changes. An effort was undertaken to create an annex to include the products from C37.20.9 and work included outdoor circuit breakers. WG is entertaining a request to include scope from C37.74 and C37.60 for potential inclusion to the guide. A PAR extension will be requested along with a PAR change shortly thereafter. In parallel to the TF working on scope from C37.74 and C37.60, WG will be begin creating a balloting pool and target a ballot before the end of the year.

T. Burse: I am concerned about including equipment that is not in the scope of the SA S/C. When do we consider this effort to fall under ADSCOM?

M. Wactor: TF, which includes RODE S/C members, are to use the draft annex for C37.20.9 equipment to see if this would cover C37.74 and C37.60 scope for inclusion into C37.20.7. The TF is targeted to complete their work by mid-November 2015 for consideration by the WG.

D. Edwards: If the WG does not receive a response from the TF, move forward with effort toward ballot. If the WG receives a recommendation from the TF, WG will decide and move in parallel effort toward ballot.

T. Olsen: Did the WG have a successful vote to move toward ballot?

M. Wactor: The WG vote was in favor of proceeding toward a ballot. Recirculation is targeted for November 2015 and an initial ballot in December 2015.

Motion by T. Burse to approve the WG to proceed to ballot, 2nd: P. Barnhart, Motion approved unanimously.

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

c. C37.20.9 – Metal Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulation Systems

E.R. Byron: Minutes are provided.

E. Byron: WG met Wednesday (Sep 23) with 44 attendees. Ballot resulted in 555 comments with approximately 200 technical in nature and 241 editorial comments. WG agreed to raise the temperature limit of plated bolted connections for SF6 and air insulated systems to 75 °C. No decision was made for temperature limits on un-plated bolted joints. WG will meet on November 2, 2015 in Raleigh, NC.

C. Taylor: Unclear there was a WG agreement on these new temperature limits.

E. Byron: WG had a successful vote to approve these temperature limits except the temperature limits for un-plated bolted joints.

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

d. C37.20.10 – Standard for Definitions for AC (52kV and below) and DC (3,2kV and below) Switchgear Assemblies

K. Flowers: Minutes are provided.

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K. Flowers: WG met three times this week with 19 WG members and 25 guests. Balloting resulted in 283 comments and no significant issues. WG resolved all but approximately 30 comments. WG plans a teleconference in 2 to 3 weeks. A recirculation ballot will occur shortly thereafter (est. January 2016).

E. Byron: Met with the HVCB S/C and they have decided to create their own definitions document and not complicate WG efforts. HVCB S/C hopes to merge their document into a ADSCOM definitions document once enough work is complete.

J. Anurag: Once this document is complete, won't we have duplicate definitions?

T. Olsen: Duplicate definitions exist today with various SA S/C documents using the same terms with slight variations.

D. Edwards: Future efforts will continue the migration definitions into the C37.20.10 document.

J. Anurag: Which document should we use when there are different definitions?

Edwards: C37.20.10 was targeted to save the definitions from being lost in the IEEE dictionary

K. Flowers: The term "Release" was reviewed by the WG and 17 different definitions exist.

P. Barnhart: If the definition exists in the base document, this is the definition. Once C37.20.10 is published this would be the next document to look for the definition unless the base document references a different document than C37.20.10 for the definition.

D. Edwards: WG chairs remember to reference C37.20.10 in your efforts. K. Flowers will monitor and vote negatively when a document does not properly reference C37.20.10.

Subsequent to the SA S/C Meeting: In the ADSCOM meeting, a discussion was that various S/C's would create separate definitions documents and then these documents would be targeted for combing into a single document.

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

e. C37.21 – Control Switchboards

D. Hrcir: Minutes are provided.

Hrcir: WG met Wednesday (Sep 23) with 9 attendees. D. Moser will be vice-chair for the WG. A lot of effort will be required to align this document with C37.20.1 and C37.20.2. Two TF groups were created with plans to complete assigned work by the end of October, 2015. WG expect more meetings in spring 2016 meeting.

Actions for SA S/C: Will contact K. Edwards and M. Wactor to update WG vice-chair role for D. Moser.

f. C37.23 – Standard for Metal-Enclosed Bus

A. Jur: Minutes are provided.

A. Jur: WG met Wednesday (Sep 23) with a shorter meeting than typical. WG reviewed latest draft document and comments from the ballot over the summer. Next draft document to be completed this week and targeting a recirculation around October 2015. Expect to go to REVCOM this year.

D. Edwards: My compliments to this WG using on line teleconferences to move this work forward.

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

g. C37.24 Task Force – Guide for Evaluating the Effect of Solar Radiation on Outdoor Metal-Enclosed Switchgear

J. McClelland: Minutes are provided.

D. Edwards: L. Farr has resigned his WG chair position. John McClelland and Terry Woodard have accepted chair and vice chair roles, respectively.

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J. McClelland: WG met Monday (Sep 21) with 12 members and 33 attendees. Latest document draft reviewed and WG targeting a PAR request early October, 2015. WG anticipates a ballot around November, 2015. WG will need meeting rooms in the spring 2016 meeting.

D. Edwards: Any technical issues?

J. McClelland: Removing the tables and updating the links in the current document.

Actions for SA S/C: Chair to report PAR activity and change of chairs.

- h. C37.81** – Seismic Qualification of Class 1E Metal-Enclosed Power Switchgear Assemblies
D. Riffe: Minutes provided.

Note that a combined WG is focused on both C37.81 and C37.82 documents.

D. Riffe: WG met on Tuesday (Sep 22) with 3 members and 11 attendees. WG reviewed current draft comments which were general and editorial in nature. Resolution of all comments achieved. Documents are ready for ballot. One technical request to include additional scope of storing equipment after a seismic event was voted upon. The WG agreed that this is not in current scope. WG voted in favor of moving to ballot on both documents.

D. Riffe: Motion to approve the WG to move forward with a ballot on C37.81 and C37.82, 2nd: T. Olsen, Motion passed unanimously.

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

- i. C37.82** – Qualifications of Switchgear Assemblies for Class 1E Applications in Nuclear Power Generating Stations
D. Riffe: Minutes Provided

Note that a combined WG is focused on both C37.81 and C37.82 documents.

D. Riffe: WG met on Tuesday (Sep 22) with 3 members and 11 attendees. WG reviewed current draft comments which were general and editorial in nature. Resolution of all comments achieved. Documents are ready for ballot. One technical request to include additional scope of storing equipment after a seismic event was voted upon. The WG agreed that this is not in current scope. WG voted in favor of moving to ballot on both documents.

D. Riffe: Motion to approve the WG to move forward with a ballot on C37.81 and C37.82, 2nd: T. Olsen, Motion passed unanimously.

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

5. Old Business

a. IEC Activities

T. Burse: No meeting minutes provided.

T. Burse: As a result of the IEC SC17C plenary meeting in held Tokyo, 2014, before pole mounted switchgear is removed during the next revision of 62271-200, a separate document must be issued to cover pole-mounted switchgear internal arc tests as a minimum.

PNW 17C-630: High-voltage switchgear and controlgear- Internal arc classification for pole-mounted switchgear for rated voltages above 1 kV and up to 52 kV was circulated 2015-06-26 with a closing date of 2015-10-02.

The next revision of 62271-200 will start in approximately 2017 (3 years in advance of the stability date).

b. ASC C37 – General Update

T. Olsen: No meeting minutes provided.

T. Olsen: Membership in process of being updated. New operating procedures are going to ballot. C37.50, 57, 58 and possibly 51 will move to ballot shortly thereafter.

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P. Barnhart: There is an issue with membership and balloting. Any general interest from a non-manufacturer should contact T. Burse.

c. Document Coordination - General Update

T. Burse: C37.100.1 voted to not increase the rated voltage to 15.5 kV. This will be revised to 15.0 kV.

6. Membership

a. Senior Membership

D. Edwards: P. Barnhart has achieved senior membership. Please move forward with on-line effort to obtain senior membership. Our goal is to have SA S/C to lead the way for high senior membership.

b. Switchgear Assemblies Subcommittee Membership

D. Edwards: Terry Woodward, Paul Gingrich and John Shullaw have been added as SA S/C members.

c. Main Committee Membership

D. Edwards: No SA S/C members have been sponsored for Main Committee membership at this time. D. Edwards to provide K. Flowers with a list of potential members for consideration during the spring 2016 meeting.

7. New Business

a. SA Document Status – Required action – review of proposed “SA Document Status” report.

D. Edwards: A new template to be used for document status file has been created by K. Edwards. This new format will be used to update all S/C web information along with collecting information in a common format for meeting planning and room requests. The template is available at the bottom of the PES Subcommittee web page. J. Mizener will be working with K. Edwards to load information from the template to the subcommittee’s website.

J. Mizener: This format will allow a copy and paste method to the update the web pages and greatly reduce the effort in accomplishing this task.

M. Lafond: will be updated. WG chairs to confirm accurate statements and sessions required for next meeting.

b. WG Meeting Room Requests – Update “SA Document Status” report

M. Lafond: Please contact me for any changes for meeting room requirements. Meeting room requests are circulated in SA Document status.

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

PAR Activity: C37.24 TF

C37.20.2 document is moving toward publishing very shortly. Motion by T. Olsen to disband the C37.20.2 WG, 2nd: M. Wactor 2nd, Motion passed unanimously.

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

Total: 14

Future PAR Activity: 1 (C37.24 TF with change of WG chairs)

Active PAR’s: 7 (C37.20.7, C37.20.9, C37.20.10, C37.21, C37.23, C37.81, C37.82)

Disbanding WG’s: 1 (C37.20.2)

Not Active: 5 (C37.20.1, C37.20.3, C37.20.4, C37.20.6, C37.121)

e. Working Group Minutes – To SA S/C Secretary no later than September 24, 2015.

Email address: mike.lafond@ieee.org

f. WG - Booklet & Website Synopsis – To SA S/C Secretary no later than September 24, 2015.

Email address: mike.lafond@ieee.org

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g. Upcoming Meetings

Spring 2016 (25 Apr – 28 Apr), Sonesta Resorts, Hilton Head Island, SC USA

Fall 2016 (9 Oct – 13 Oct), Sheraton Station Square, Pittsburgh, PA USA

Spring 2017 (23 Apr – 28 Apr), Hilton Charlotte University Place, Charlotte, NC USA

Fall 2017 (8 Oct – 13 Oct), Marriott Portland Sable Oaks, Portland, ME USA

Spring 2018 (22 Apr – 27 Apr), Disney's Contemporary Resort, Lake Buena Vista, FL USA

8. Adjourn

Meeting adjourned at 2:45pm.

Reported by:

Michael P. Lafond

Switchgear Assemblies Sub-Committee Secretary

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Attendance record and as recorded in the AMS system:

Role	First Name	Last Name	Company
Chair	Doug	Edwards	Siemens Industry, Inc.
Secretary	Michael	Lafond	General Electric
Member	Charles	Ball	S&C Electric Company
Member	Paul	Barnhart	Underwriters Laboratories
Member	Jerry	Baskin	Federal Pacific
Member	Ted	Burse	Powell Industries, Inc
Member	Eldridge	Byron	Schneider Electric
Member	David	Dunne	Schneider Electric
Member	Jerry	Earl	ABB - Retired
Member	Michael	Flack	Southern Company Generation
Member	Keith	Flowers	Siemens Industry, Inc.
Member	Paul	Gingrich	AZZ / Central Electric
Member	Sahadev	Gohil	AZZ/Central Electric Mfg. Co.
Member	Tom	Hawkins	Siemens Industry, Inc.
Member	Dan	Hrcir	Eaton
Member	Anurag	Jivanani	General Electric
Member	Arthur	Jur	Eaton Corporation
Member	Albert	Livshitz	CE Power Solutions
Member	Alex	Lizardo	ABB
Member	Frank	Mayle	Technibus, Inc.
Member	Deepak	Mazumdar	Central Electric Manufacturing Co.
Member	John	McClelland	Technibus
Member	Charles	Morse	Morse Ventures, Inc.
Member	Darryl	Moser	ABB
Member	T	Olsen	Siemens Industry, Inc.
Member	Miklos	Orosz	Schneider Electric
Member	Amit	Patel	GE
Member	Dave	Riffe	Westinghouse Electric Company
Member	Carl	Schneider	Schneider Electric
Member	John	Shullaw	Retired -GE
Member	Dean	Sigmon	Eaton Corporation
Member	Paul	Sullivan	DuPont
Member	Chand	Tailor	Eaton Corporation
Member	Michael	Wactor	Powell Industries, Inc
Member	Terry	Woodyard	Siemens Industry Inc.
Guest	David	Beseda	S&C Electric Co.
Guest	Russell	Boyce	Eaton

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Guest	Clint	Carne	Schneider Electric
Guest	Stephen	Cary	GE Energy Management
Guest	Michael	Christian	ABB
Guest	Robert	Cohn	Powercon Corp.
Guest	Susan	Colsch	Schneider Electric
Guest	Daniel	Delfino	General Electric
Guest	Donald	Elliott	ABB
Guest	Sergio	Flores	Schneider Electric Inc. USA
Guest	Anne	Good	Netshape Technologies, Inc.
Guest	Lou	Grahor	Eaton Corporation
Guest	Ronald	Hartzel	Eaton Corporation
Guest	Jayamali	Kasige	Crown Technical Systems
Guest	Carl	LaPlace	GE Industrial Solutions
Guest	Steven	Meiners	GE
Guest	Jeffery	Mizener	Siemens Industry
Guest	Terry	Neighbours	ABB Inc.
Guest	Rahul	Pawar	ABB
Guest	Ahmad	Qasem	Bechtel
Guest	Samala Santosh	Reddy	Powell Industries
Guest	Richard	Rohr	Powell Electrical Systems
Guest	Tim	Rohrer	Exiscan
Guest	Erin	Spiewak	IEEE
Guest	Kresimir	Starcevic	KEMA-Powertest, LLC
Guest	Richard	Tanner	Schneider Electric
Guest	Jey	Thayalan	Schneider Electric
Guest	Robert	Warren	DNV GL - KEMA Laboratories
Guest	Michael	Whitney	S&C Electric Company
Guest	Matthew	Williford	Schneider Electric