

IEEE Power & Energy Society  
Switchgear Committee  
C37.20.7 Working Group Report  
25-April-2017

The working group met on Tuesday, April 25, 2017 at 8:00 AM.

Agenda:

The agenda was previously distributed. Agenda accepted without objection.

Patents: Those registered at the Switchgear Committee meeting in Charlotte, NC were required to acknowledge the IEEE-SA rules on Patents, and therefore, review in this meeting is not required. Nevertheless, the chair reminded participants that anti-competitive issues are never allowed for discussions.

General:

The PAR for this project was approved by the IEEE-SA Standards Board on November 9, 2011, and is valid until December 31, 2017.

Members introduced themselves, identified their company and their affiliation. Total attendance was 69 persons. Attendance included 20 working group members (of 30, with 8 absent and 2 excused, plus 49 guests. Attendance is as shown below:

Attendance of working group members was recorded by roll call, to establish that a quorum was present. A quorum was present.

Members / Affiliation	Members / Affiliation	Guests / Affiliation	Guests / Affiliation
P. Barnhart (P) - UL	D. Mazumdar (A) - AZZ	A. Bartek (P) – C-K	D. Nyberg (P) – 3M
J. Baskin (A) – Federal Pacific	D. Mohla (A) – DCM Electrical Consulting	Composites	N. Orlando (P) – IEEE-SA
R. Boyce (A) – Eaton	A. Morse (P) – Siemens	B. Behl (P) - ABB	B. O'Neill (P) – CE Power
J. Bowen (P) - Aramco	D. Moser (P) - ABB	D. Berenguela (P) - Google	O. Parks (P) - ABB
E. Byron (P) - Schneider	T. Olsen (P) - Siemens	C. Carne (P) – Schneider	R. Pawar (P) – ABB
D. Edwards (P) - Siemens	M. Orosz (A) - Schneider	R. Cohn (P) – Powercon	Andrew Peterson (P) – ABB
M. Flack (P) – Southern Nuclear	A. Patel (A) - GE	M. Colesanti (P) - Google	I. Profir (P) - Rockwell
K. Flowers (P) - Siemens	C. Schneider (P) - Schneider	D. Dunne (P) - Schneider	A. Qasem (P) - Bechtel
D. Gohil (P) – AZZ	T. Suave (E) - Rockwell	D. Elliott (P) – ABB	S. Reddy (P) - Powell
T. Hawkins (P) - Siemens	P. Sullivan (P) - DuPont	S. Flores (P) - Schneider	T. Rohrer (E) - Exiscan
A. Jur (A) – Eaton	C. Tailor (P) - Eaton	P. Gingrich (P) – AZZ	R. Rohr (P) – Powell
C. Kennedy (P) - Schneider	M. Valdes (P) - GE	L. Grahor (P) – Eaton	A. Rowell (P) - Eaton
M. Lafond (P) - GE	M. Wactor (P) – Powell	R. Hartzel (P) – Eaton	J. Ruebensam (P) – S&C
D. Lemmerman (A) – Exelon/PECO	R. Warren (P) – DNV GL KEMA	J. Hines (P) - Eaton	M. Seabrook (P) – GE
F. Mayle (E) - Technibus	T. Woodyard (P) – Siemens	J. Houston (P) – Houston Co	M. D. Sigmon (P) - Eaton
		D. Hrcir (P) – Eaton	E. Spiewak (P) – IEEE-SA
		M. Hussey (P) - Eaton	D. Swindler (P) - Retired
		R. Jain (P) – S&C	B. Venne (P) – Rockwell
		W. Jung (P) – Siemens	N. VonFeidt (P) - Ameren
		J. Kaminski (P) – Siemens	J. Webb (P) - ABB
		A. Khosravi (P) – BC Hydro	E. Wilkie (P) – Eaton
		J. Lagree (P) - Eaton	M. Williford (P) - Schneider
		A. Livshitz (P) – CE Power	T. Wirz (P) - ABB
		J. McLelland (P) – Technibus	E. Yee (P) - Eaton
		N. McQuin (P) - consultant	W. Zhang (P) - Hitachi
		T. Neighbors (P) – ABB	

The minutes from the Fall 2016 meeting were approved as distributed by absence of requested changes.

The invitation to join the ballot group had been sent out to 670 persons, and 113 persons joined the ballot group.

A request to modify the scope of the PAR to match the draft content had been submitted and approved by the IEEE-SA Standards Board on 22-September-2016. The PAR has also been extended and is valid through December, 2017.

Chair Comments and review of ballot results:

The second ballot (for Draft 14) opened February 2, 2017 and closed on March 4, 2017. Ballot results are as follows:

<b>Recirculation #1</b>	<b>Initial Ballot</b>
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**BALLOT OPEN DATE:** 02-Feb-2017  
**BALLOT CLOSE DATE:** 04-Mar-2017  
**TYPE:** Revision  
**DRAFT #:** D14  
**BALLOTS RECEIVED:** 27  
**VOTE CHANGES:** 18  
**COMMENTS:** 192  
**MUST BE SATISFIED COMMENTS:** 114

**RESPONSE RATE**  
This ballot has met the 75% returned ballot requirement.  
113 eligible people in this ballot group.

84 affirmative votes  
16 total negative votes with comments  
14 negative votes with new comments  
0 negative votes without comments  
3 abstention votes: (Lack of expertise: 1, Other: 2)

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103 votes received = 91% returned  
2% abstention

**APPROVAL RATE**  
The 75% affirmation requirement is being met.  
84 affirmative votes  
16 negative votes with comments

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100 votes = 84% affirmative

Draft 3 of the ballot comment (strawman) dispositions spreadsheet was previously distributed and final discussions are the subject of this meeting. Two persons provided comments on the strawman dispositions prior to this meeting. The comments of these persons were reviewed, and then the discussion was opened up for any items not otherwise discussed.

Discussion items:

1. Comment r01-163, line 305: Objected to inclusion of air insulated circuit breakers – wants to call them dead tank. Decision – add informative note that these are sometimes referred to as dead-tank circuit breakers.

2. Comment r01-148, line 306: Objects to formation of ballot group, as when it was formed, C37.04 circuit breakers were not in scope and therefore those persons who might be interested in C37.04 type circuit breakers did not sign up. Request is to terminate ballot and reform ballot group. Decision – keep C37.04 circuit breakers in the document. Decision: continue forward with rebalot. In comment disposition, point out that in the document, the term “switchgear” is used in its most generic sense, and therefore, C37.04 type air-insulated circuit breakers are already encompassed in the scope.
3. Comment r01-150, line 310: Comment on testing with gases other than air. Document states that all testing is with arcs in air. Decision – words are adequate. Chair will consider adding some words to the application.
4. Comment r01-170, line 421: No change required.
5. Comment r01-152, line 933: Request horizontal indicators for outdoor equipment. Decision – add horizontal indicators.
6. Comment r01-162, line 1007: What if indicator rack moves during test? Decision – text is adequate.
7. Comment r01-157, line 2046: See resolution to r01-152. Add horizontal indicators.
8. Comment r01-160, line 2303: It is agreed that unusual rack configurations might be required to meet the requirement for 100 mm spacing. The text does not require only a single rack or a rack with only one plane.
9. Comment r01-164, line 880: Agreed that text is adequate.
10. Comment r01-182, line 505: Change in line 508 from “.. fail to operate successfully” to read “... when the current limiting device is not in its current limiting range.”
11. Comment r01-181, line 1073: Maximum time is for duration limiting device. A modification will be made to lines 856-860 to address.
12. Comment r01-195, line 1077: Text is clear but other changes (to lines 856-860) clarify.
13. Comment r01-139, line 2112: Revise to allow for option to use a new test specimen or with the same test specimen.
14. Comment r01-176, line 2126: Strawman is OK.
15. Comment r01-140, line 2144: Remove metric wire diameters. In line 875, add sentence “wire initiation sizes are specified in trade sizes with no metric equivalent.” Also, change “should” to “shall” in line 875.
16. Comment r01-147, line 2156: Accept strawman, except change “should” to “shall” in line 888. Also change melted to vaporized.
17. Comment r01-174, line 2164: Strawman is OK.
18. Comment r01-144, line 2193: Strawman is OK.
19. Comment r01-146, line 2196: Strawman is OK.
20. Comment r01-145, line 2205: Remove metric wire diameters. In line 875, add sentence “wire initiation sizes are specified in trade sizes with no metric equivalent.” Also, change “should” to “shall” in line 875.
21. Comment r01-177, line 2208: remove “test 2 of”. Make comparable change to other clauses with similar language (lines 2165, 2173, 2209, NS 2451).

After discussion of the comments from two persons after the strawman dispositions were distributed, the remaining ballot comments were reviewed in the time available in case other participants had issues with the strawman proposals. The following items discuss comments on which there was discussion that resulted in a change of the strawman disposition.

22. Comment r01-41, line 584: Change fault initiation to arc initiation. Make similar changes in other similar locations in the document.
23. The chair requested that Mr. Profir provide documentation to address prospective current discussed in 5.3.1 by no later than May 15, 2017.
24. Comment r01-91, line 713-721 was revised incorrectly from D13. Words should match UL 845, clause 9.10.7.3. Motion: Comment R01-91, section 5.3.4, the calibration of the test circuit at lab terminals using cable at full voltage will use the language of UL 845. Moved by M. LaFond and seconded by P. Barnhart. Motion passed.
25. Comment r01-150, line 962: Change from rejected to revised, and to accept in principle.

By consensus, the chair will editorially revamp dispositions in line with these minutes and the strawman proposals, revise the draft to agree, and launch third ballot. The intent is circulate the finalized dispositions to the working group with a revised draft (D15) by the end of May, and to initiate the recirculation ballot by mid-June. Our desire is to submit to RecCom by July 28.

It is our objective to initiate the third ballot following this meeting.

The meeting adjourned at 3:40 PM.

Report submitted by:

M. Wactor, WG Chair