

IEEE Power & Energy Society  
Switchgear Committee  
C37.20.7 Working Group Report  
28-April-2015

The working group met on Tuesday, April 28, 2015 at 8:00AM.

Agenda:

The agenda was previously distributed. Agenda accepted without objection.

Patents:

Those registered at the Switchgear Committee meeting in St. Pete Beach had to acknowledge the IEEE-SA rules on Patents, and therefore, review in this meeting is not required. Nevertheless, the chair displayed the Patents slides and reminded attendees of their obligations. The participants were reminded 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 through 2015. We will have to submit a request to extend the PAR and may also need to change the scope of the document in the PAR.

Members introduced themselves, identified their company and their affiliation. Total attendance was 81 persons. Attendance included 29 working group members (of 31, with 0 absent and 2 excused, plus 53 guests. Attendance is as shown below:

Members / Affiliation	Members / Affiliation	Guests / Affiliation	Guests / Affiliation
C. Ball (P) – S&C	D. Lemmerman (P) – Exelon/PECO	D. Beseda (P) – S&C	S. Meiners (A) - GE
P. Barnhart (P) - UL	F. Mayle (P) - Technibus	J. Campbell (P) – Powell	R. Morris (A) - Eaton
J. Baskin (P) – Federal Pacific	D. Mazumdar (P) - AZZ	C. Carne (P) – Schneider	D. Moser (P) – ABB
R. Boyce (P) – Eaton	D. Mohla (E) – DCM Electrical Consulting	S. Cary (P) - Eaton	O. Parks (P) - ABB
J. Bowen (P) - Aramco	A. Morse (P) – Morse Ventures	R. Cohn (P) – Powercon	R. Pawar (P) - ABB
E. Byron (P) - Schneider	T. Olsen (P) - Siemens	L. Conner (P) - Eaton	A. Petersen (P) – ABB
J. Earl (P) - ABB	M Orosz (P) - Schneider	D. Dunne (P) - Schneider	S. Powell (P) – AZZ
D. Edwards (P) - Siemens	A. Patel (P) - GE	D. Elliott (P) – ABB	I. Profir (P) – Rockwell
M. Flack (P) – Southern Nuclear	C. Schneider (P) - Schneider	S. Flores (P) - Schneider	R. Puckett (E) – retired
K. Flowers (P) - Siemens	J. Smith (E) - retired	P. Gingrich (P) – AZZ	S. Reddy (P) – Powell
D. Gohil (P) – AZZ	P. Sullivan (P) - DuPont	D. Giraud (P) - Powell	J. Rizo (P) – Xcel Energy
S. Hutchinson (A) - Shallbetter	C. Taylor (P) - Eaton	A. Good (P) – Netshape Technologies	M. Roberson (P) - AZZ
H. Josten (P) - Siemens	M. Valdes (P) - GE	L. Grahor (P) - Eaton	T. Rohrer (P) - Exiscan
A. Jur (P) – Eaton	M. Wactor (P) – Powell	R. Hartzel (P) - Eaton	R. Rohr (P) - Powell
C. Kennedy (P) - Schneider	R. Warren (P) – KEMA Laboratories	T. Hawkins (P) – Siemens	A. Rowell (P) - Eaton
M. Lafond (P) - GE		J. Hensberger (P) - MEPPi	B Samlar (P) - ABB
		J. Hidaka (P) – UL	T. Schiazza (P) - Schneider
		D. Hrcir (P) – Eaton	M. Seabrook (A) – GE
		D. Jackson (P) – ABB	J. Shullaw (P) - GE
		J. Jarque (P) – AZZ	M. D. Sigmon (P) - Eaton
		A. Jivanani (P) - GE	E. Spiewak (P) – IEEE-SA
		W. Jung (P) – Siemens	J. Stacy (P) – Schneider
		J. Kaminski (P) – Siemens	T. Sauve (P) – Rockwell
		J. Kasige (P) – Crown Technical Systems	R. Tanner (P) – Schneider
		A. Lizardo (P) - ABB	T. Tobin (P) – S&C
		J. Lord (P) - Siemens	E. Yee (P) - Eaton
		J. McClelland (P) – Technibus	L. Yonce (E) – Eaton
		C. McCollum (P) – ABB	M. Williford (P) - Schneider
			T. Woodyard (P) - Siemens

The minutes from the Fall 2014 meeting were approved. J. Bowen moved to approve and J. Earl seconded. Motion passed unanimously.

Chair Comments:

Objective is to get through the issues on the agenda, and then move to ballot. The intent is to start the first ballot sometime after this meeting.

Review of D8 issues in preparation of D9:

- The chair requested approval of the group to skip comments considered by him to be editorial, so that the attention of the group could be focused on the significant issues. No one objected to this approach.
- Arc initiation issues, especially relative to MCCs, switchboards, and other products were discussed. Input received will be included in the next draft.
- 5.3.3: Applied insulation – how do you initiate the arc? If you have elbow terminations, are they “applied insulation”. Perhaps modify the definition to exclude elbow terminators from the definition of applied insulation? Or specify special instructions on initiation of the arc when IEEE 386 terminators are used? And, does the test need to be two-phase or does it need to be three-phase? If elbows are installed, it should be two-phase, but if the elbows are not in place, three-phase? C. Ball, C. Schneider, and P. Barnhart will craft some words on this issue. Also add phrasing about separable connectors and dielectric caps on the bushings for separable connectors. Alternatively, do a single-phase to ground test on one bushing. Or pull all elbows and do a three-phase test.
- Arc extinguishing zones – proposal by J. Bowen, inspired by IEC. This is referred to the LV task force for comment and for submittal of a refined proposal. C. Schneider, K. Flowers, and H. Josten. Expected response end of May.
- Reduced voltage test methods – the chair turned the gavel over to the vice-chair in order to present a proposal on reduced voltage, to address the concerns that have been discussed concerning the 90% peak current requirement during the actual arcing test. R. Warren, S. Flores, R. Hartzel, M. Wactor, T. Olsen, and P. Barnhart will work to refine the proposal. The gavel was returned to the chair.
- GIS switchgear – a proposal was to be submitted. The C37.20.9 WG meeting will occur on 29-April, and will be incorporated into the next draft as an additional annex, provided that a proposal is received by the end of June. Further discussion may be required as to whether GIS switchgear should be in C37.20.7 or should be covered in C37.20.9.
- Outdoor circuit breakers – a proposal from the C37.09 working group will be forwarded to the chair this week by T. Woodyard.
- Metal-enclosed bus – One vendor has suggested that ME bus be deleted, and others say that the draft is clear on how to test ME bus. Discussion occurred about the present draft on ME bus. There are many possible configurations of ME bus and this could cause a great many tests. This suggests a need to restrict the test configurations for ME bus to make testing realistic. The ME task force will reconsider and develop a revised proposal to address the configurations to be tested, and the types of application information to be provided by the manufacturer for proper installation / application of the ME bus.
- Power conversion equipment – it was suggested that UL 347A power conversion equipment be included, but we have no request from the applicable technical committee, and therefore would likely delay this document. We will consider addition of an annex for this equipment if a proposed annex is received by the end of June. Otherwise, we would likely consider for an amendment or a subsequent revision.
- Attachment of arc initiation wires – do we need to give more detail of how the arc initiation wires need to be attached to the test specimen for low voltage equipment? There seems to be a need to give more detail. The manufacturers are requested to provide information on this issue to P. Barnhart, who will compile it in a manner as to preserve confidentiality and anonymity. The information is requested by the end of June.
- Simulation of circuit breakers – in section 5.1, we allow mockups of major components (e.g., circuit breakers). The chair will include suggested revised language in the next draft for comments.
- Frequency used during testing – it has been decided that decay of frequency does not matter during testing for test durations beyond 50ms.
- Fault current duration – introduced words to allow for extended duration in the situation in which the peak current can only be met with lower symmetrical current values, as dictated by some laboratory limitations. Thus, the duration would have to be extended in order to achieve equivalent

accumulated arc energy. This somewhat analogous to the situation for short-time current tests on circuit breakers and switchgear assemblies.

- Working group participants are requested to thoroughly review the application section, which has been predominantly unchanged for many years. Addition of other types of equipment may make changes in the application section necessary.

It is expected that the next draft will be sent out for comments in July, with comments due four weeks later. We will hold telecons if needed to move resolution along, and will resolve any remaining issues at the Fall 2015 meeting, with the intent to go to ballot after the Fall meeting.

The meeting adjourned at 11:38PM.  
Report submitted by:

M. Wactor, WG Chair