

The task force met on Tuesday, May 17, at 8:00AM.

Patents:

IEEE-SA rules on Patents were reviewed prior to further discussions. The IEEE-SA patent slides of 2008 were shown and will govern the activities of the task force.

General:

This is a task force, as no PAR has been submitted yet. An objective of this meeting is to determine the scope of the PAR so that we can submit it to the IEEE-SA for consideration.

Attendance included 25 task force members (of 29) and 28 guests. Attendance is as shown below:

Members	Members	Members	Guests	Guests
C. Ball (P) **	J. Giacetti (P)	T. Olsen (P) **	G. Arce (P)	A. Jivanani (P)
P. Barnhart (P) **	R. Hartzel (P)	M. Orosz (P) **	J. Bowen (P)	H. Josten (P)
J. Baskin (P)	C. Kennedy (P)	A. Patel (A)	R. Boyce (P)	T. Lagerstrom (P)
R. Bugaris (P)	M. Lafond (P)	C. Schneider (P)	C. Carne (P)	R. Morris (P)
E. Byron (E) **	D. Lemmerman (P) **	J. Smith (P) **	R. Cohn (P)	D. Moser (P)
J. Earl (P)	F. Mayle (P)	P. Sullivan (P)	D. Dunne (P)	P. Novak (P)
D. Edwards (E)	D. Mazumdar (P) **	C. Tailor (P)	D. Elliott (P)	R. Pawar (P)
D. Gohil (P)	D. Mohla (P)	M. Wactor (P) **	P. Gingrich (P)	E. Peters (P)
M. Flack (P)	A. Morgan (E)	J. Zawadzki (P) **	L. Grahor (P)	D. Riffe (P)
K. Flowers (P)	A. Morse (P)		T. Hawkins (P)	A. Rowell (P)
			J. Hidaka (P)	G. Schoonenberg (P)
			D. Hrcir (P)	J. Toney (P)
			R. Hughes (P)	R. Warren (P)
			S. Hutchinson (P)	M. Williford (P)

P = present, E = excused, A = absent, ** indicates members of the working group for C37.20.7-2007.

The task force has been discussing proposals for revision of the present document. Discussions continued, including:

- Medium-voltage motor control
- Low-voltage motor control
- Bus duct per C37.23
- Other equipment, such as transformers, large motor drives, switchboards (UL 891), and others.

Both MV motor control (UL 347) and LV motor control (UL 845) have submitted suggested language to incorporate their products, and these submittals have been considered in earlier meetings of this task force.

For switchboards (UL 891), C. Schneider will discuss in the UL 891 group to get suggested language submitted to us. We need to have such a request for inclusion, as UL 891 equipment is outside the scope of the IEEE PES Switchgear Committee.

The text of the present draft, inclusive of modifications as previously discussed, was reviewed. Among items discussed:

- Definition of arc-resistant motor control, unit, etc. Comments were made that many aspects of the present document are not appropriate for low-voltage motor control. It was also requested that we review the IEC standard for arc-resistant motor controlgear equipment, as this may give us insights as to the issues.
- Preferred duration. This is 0.5 seconds for most equipment but for LV motor control, it is 0.050 seconds to correspond to the short-time rating of LV motor control.

- Additional equipment types. If we add several different kinds of equipment, we may want to consider the organization of the document, and move each equipment type out to its own annex, including the three types in the existing document.
- To encompass other types of equipment, we need to re-title the document from covering “metal-enclosed switchgear” to “equipment”. This will require editorial revamp throughout the document.
- The scope needs to be expanded to include the equipment types being added. The scope was extensively modified to be more generic and allow the additional equipment types.
- C37.20.1 task group: H. Josten (lead)
- C37.20.2 task group: J. Earl (lead)
- C37.20.3 task group: C. Ball (lead)
- C37.23 task group: E. Peters (lead)
- UL 347 task group: A. Morse (lead)
- UL 845 task group: K. Flowers (lead)
- UL 891 task group: C. Schneider (lead)
- We need to consider the impact of the use of a plenum (or exhaust duct) that is common over multiple types of equipment (e.g., a single plenum (exhaust duct) above MV metal-clad switchgear connected to MV motor control equipment) and the requirements to validate that the common plenum functions in the same manner as separate plenums performed in separate tests. Mr. Barnhart indicated that he has some experience with tests in this realm. It was suggested that we have another task force to consider the impact of the plenum (exhaust duct), what is the energy released from the exhaust outlet, what temperatures exist beyond the exhaust outlet, etc. In the existing document, a plenum or exhaust duct is referred to as an “exhaust system”. It was agreed to wait on challenging this topic until after the other task forces have provided their input.
- Each of the task force chairs was requested to submit a list of task force members by May 31, and submit input for the draft by August 1.

Discussion of grounding

IEC limits current to ground to 100A or less during arcing tests. IEEE requires that the enclosure be connected to the source in such a manner that there is no significant limitation on ground current. Significant discussion occurred relative to which testing arrangement produces the most onerous conditions. Several report that testing with solid grounding produces more dramatic results during testing. Others report that testing with limited ground current forces the arcing to remain as three-phase arcing and produces the highest pressure on the enclosure

Gerard Schoonenberg presented some information relative to the grounding issue, from the view of IEC. Recently, KEMA-Chalfont conducted tests at 64kA and about 10% of the current appeared in the ground connection. KEMA-Arnhem conducted tests in February 2011 to explore differences with grounded neutral and tests with neutral floating with test current of 18kA. These were tests with a custom test enclosure that could be reused, not like an ordinary test specimen to C37.20.7. A metal bracket was arranged relatively close to the phase electrodes, so that it was readily involved in the arcing. Whether this was representative of a real test unit is open to question. Arc voltages were of the order of 300 volts.

Pressures measured were relatively in the same area for each test voltage. The arcing energies were also in the same range. Tests were conducted for 0.3 seconds with test voltages of 6kV and 24kV, with neutral grounded and with neutral floating.

Mr. Schoonenberg will request permission to make the material presented available to the participants, and if so, the material will be provided with the minutes.

The meeting adjourned at 11.20AM.

Report submitted by:

M. Wactor, WG Chair