IEEE Power & Energy Society
Switchgear Committee
C37.20.2 Working Group Report
19-May-2008

The working group met on Monday, May 19, at 1:39PM. This is the fourth meeting of the working group.

Patents:
IEEE-SA rules on Patents were reviewed prior to further discussions. The introductory slide, and slides #1 through #5 of the IEEE-SA Patents Slide Set (2008) were shown. The WG attendees were advised:

- The IEEE's patent policy is consistent with the ANSI patent policy and is described in Clause 6 of the IEEE-SA Standards Board Bylaws;
- Early identification of patent claims which may be essential for the use of standards under development is encouraged;
- There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.

The participants were provided an opportunity to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of the standard which will result from the activity of the WG. No responses were received during the meeting regarding patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.

Attendance:
Attendance is as shown below. 14 (of 19) WG members attended, with 1 WG member excused. 12 guests were present.

Members	Members	Members	Guests	Guests
P. Barnhart (P)	R. Hartzel (P)	C. Schneider (P)	L. Conner (P)	A. Livshitz (P)
E. Byron (P)	F. Mayle (P)	J. Smith (P)	L. Davis (P)	I. Profir (P)
V. Coletta (A)	D. Mazumdar (P)	A. Storms (P)	E. Dullui (P)	P. Sullivan (P)
R. Cubbage (A)	A. Morgan (P)	C. Tailor (P)	D. Giraud (P)	J. Toney (P)
P. Dwyer (P)	T. Olsen (P)	M. Wactor (P)	R. Jackson (P)	T. Williams (P)
L. Farr (A)	M Orosz (E)		D. Lemmerman (P)	D. Yek (P)
D. Gohil (P)	R. Puckett (A)			

P = present, E = excused, A = absent

General:
A PAR for this project needs to be submitted for approval by IEEE-SA. This will be done in 2008.

No comments were received on the minutes of the previous working group meeting, and they are considered approved as distributed.

In previous meetings, two task forces were assigned:

- Task force 1: Seismic (R. Hartzel, T. Olsen, E. Byron, D. Lemmerman, C. Ball, M. Wactor). R. Hartzel prepared background material on seismic.
  - Material submitted by R. Hartzel was reviewed briefly. This material will be distributed.
  - C. Tailor discussed several white papers discussing the various seismic documents, and these will also be distributed.

    - C37.81 is obsolete. IBC is not very specific, and some are testing to ICC Acceptance Criteria AC156, which contains a factor that results in a very high force during testing, far in excess of historical testing. IEEE 693 was created from a utility substation perspective and its requirements lack the detail needed for consistent testing.
    - Input from the WG members and interested others is requested by late July.
- Task force 2: Flame testing (T. Olsen, J. Smith, A. Storms, M. Orosz, P. Barnhart, C. Ball, M. Wactor). Little activity has occurred to this point. Progress is needed.
    - Excerpt from earlier minutes: 6.2.7.1 covers flame resistance tests. C37.55 provides guidance for substitution of materials, but allows different requirements for the substitute materials. C37.55 allows 94V0 flame resistance, quite different from the requirement in C37.20.2. We need to address proper requirements and both C37.20.2 and C37.55 should agree. If 94V0 is sufficient for substitution, why isn't it acceptable in the first instance? Is 94V0 sufficient? UL 94V0 is based loosely on ASTM 4804. This issue affects a wider group than just C37.20.2. It is requested that the Switchgear Assemblies subcommittee appoint a task force to study this issue.
    - Should material requirements be different depending on the hardness (durometer) of the material?
    - Is the flame resistance test in 6.2.8 appropriate?
    - J. Smith stated that we need to involve insulation material suppliers and get their input.
    - In existing 7.9, the reference to 6.2.7 should have been to 6.2.8 instead.
    - The support material on insulation will be distributed.
    - Input from the WG members and interested others is requested by late July.
- Coatings other than paint -- we previously agreed to put E. Byron's information into the draft, and subject it to comments.
- Comments were received from D. Mazumdar
    - Use of switches in metal-clad switchgear
    - Meaning of "no intentional openings" between compartments.
    - Question concerning dc withstand voltage values in table 1.
    - Appropriate requirements for molded insulators (as compared to sheet type insulation).
    - Question validity of cumulative loading values in table 12.
    - Shutter material, metal vs. insulation.
    - Temperature of air surrounding devices.
    - The information from D. Mazumdar will be distributed.

<u>Harmonization with C37.100.1:</u>
Previously, the WG had reaffirmed the desire to revise clause numbering to reflect C37.100.1 (common clauses). Subsequently, IEEE-SA staff indicated that renumbering would not be acceptable. This subject will be further discussed with IEEE-SA staff, together with assistance from D. Stone. Pending final resolution of this point, these minutes contain an excerpt from previous minutes on assignments made in this connection. The entire document must be reviewed. Responsibility for reviewing specific clauses was assigned as follows. All interested parties are invited to submit comments or suggestions for any clauses, not restricted by the responsibilities shown below:

Clause	Subject	Responsible
1	General	M. Wactor
2	References	M. Wactor
3	Definitions	C. Schneider A. Storms
4	Ratings	T. Olsen
5.3	Grounding	M. Wactor
5.4	Control and secondary circuits	C. Tailor D. Edwards
5.10	Markings	T. Olsen
5.11 -5.19	Interlocks to X-Ray	T. Olsen
5.101-5.109	Internal fault to test cabinet	J. Smith

Clause	Subject	Responsible
5.102.3.1	Barriers	D. Mazumdar
6.2-6.2.101	Dielectric	M. Wactor
6.3-6.5	Temperature rise	T. Olsen
6.6	Short-circuit	R. Puckett
6.7-6.9	Degree of protection to EMC	A. Storms
6.100	Auxiliary	T. Olsen M. Wactor
6.101	Mechanical endurance	P. Dwyer
6.102	Flame-resistance and track resistance	M. Orosz
6.103	Flame resistant tests for applied insulation	J. Smith
6.104	Coating test	M. Orosz
6.105	Rain test	D. Gohil
7	Production tests	C. Schneider
8.1	Unusual service conditions	D. Gohil
8.1.4.6	Seismic	R. Hartzel
8.2-8.3	System voltage and insulation	M. Wactor
8.4	Current	A. Storms
8.5 – 8.8	Short-circuit to protection and isolation	T. Olsen
10	Installation	A. Morgan
A	Enclosure	A. Morgan
B	Bibliography	T. Olsen
added	Partial discharge	J. Smith

- On Annex A, A. Morgan reviewed and requested more discussion. A subgroup consisting of A. Morgan, E. Byron, C. Schneider, C. Tailor, P. Barnhart, and D. Mazumdar volunteered to review this further.

Query received by IEEE-SA:

The WG has received a query from IEEE-SA, excerpted below:

said.attak@areva-td.com
To: Kim Breitfelder/STDS/STAFF/US/IEEE
5/08/2008 03:27 PM
Subject: Re: Tr : Flaps on Barriers in ANSI Standard
Customer Service Request ID: 003E6C0B

From: said.attak@areva-td.com To: stds-help@ieee.org
Subject: Tr : Flaps on Barriers in ANSI Standard
Date 05/05/2008 07:37 AM

Good afternoon,

Could you please give us a clarification or some additional informations about the following sentence extracted from Chapter 7.7 - Barriers of IEEE Std C37.20.2-1999

" To minimise the possibility of communicating faults between primary sections, the barriers between primary sections shall have no intentional openings "

My poor level of english and my main experience in IEC product development and the endless disscussion generated by this subject makes me having some doubt..

Actually in between compartment for the product answering to the IEC requirements it is comon to make some openings for the ventilation.

In that case flaps are provided behind any openning and in case of internal arc fault those flaps are pushed by the Gaz pressure on the openings to avoïd the Gaz to poluate other compartments.

So the main question is :

Can we apply a such design for product designed according ANSI requirements or this part of the sentence " shall have no intentional openings " makes it absolutly not allowed.

Thanks in advance for your response

Best regards

S. Attak
AREVA T&D
mailto: said.attak@areva-td.com

The WG considers this a question, not requiring an interpretation.
The WG unanimously agrees that the design as described in the query, with normally open ventilation flaps between primary compartments, does not meet the requirements of C37.20.2.

The meeting adjourned at 4:44PM.

Report submitted by: M. Wactor, WG Chair