Visible Break Discussion Group

April 25, 2016 – Hilton Head, SC – Sonesta Resort

Chair: Francois Soulard

First meeting under ADSCOM/RODE Subcommittee

Meeting Minutes

1. Call to order and introduction:

By Francois Soulard. Introduction and group representation.

2. Roster Check:

First meeting therefore no roster. A list of persons present at the fall meeting circulate to take the presence.

3. Previous Meeting Minutes:

First meeting therefore no previous meetings.

4. Meeting Highlights:

1. This is a study group formed ad-hoc to evaluate the best process to address a raised issue that cannot be discussed during the subcommittee meeting. The group representing subcommittees will report to their subcommittee the conclusions and recommendations. There will be five subjects that will have an open discussion on. We are looking for a minimum recommendation on these.
    a. It is not intended for this group to come up with a standard. A White paper.
    b. The group will report discussions and conclusions to RODE then RODE to ADSCOM.
2. Historically, a study group was formed at the Spring 2015 meeting and were invited to continue the RODE subcommittee discussion and report their conclusions.
    a. Volunteers was; Francois Soulard (Chair), Nenad Uzelac, Jeff Gieger, Paul Found, Jonathan Deverick, Jim Swank , Jerry Baskin, Bill Walters, Anil Dhawan, Tim Royster.
    b. Discussion concluded that the subject exceed the scope of RODE and shall be addressed to ADSCOM.
3. This was raised in solid dielectric. Question was raised regarding what about other types of equipment rather than solid dielectric?
4. Initially in NEC this was called air breaks. It was looked at what could or should be done to incorporate more types of devices. There was exclusion in NEC that said circuit breakers with rack out there are no way to see a visible break. This is also how to maintain 110% safety factor in documents. Some standards and NEC do not have this 110% requirement.
    a. What came up after this initial discussion was solid dielectric.
    b. What was provided to Francois was that solid dielectric had needed to discuss visible break but did not deal with breakers.
5. Subjects
    a. What is a visible break?

i. The 110 % is for BIL or 60 sec withstand voltage is what circuit breakers and switches are tested to. If there is a flashover it is to have it go to the ground, not across the gap.
ii. Intent is to ensure the safety of a person working downstream.
iii. You need to see an opening in the device. Not a semaphore etc.
iv. Switchgear assembly is comfortable that a racked out breaker can be accepted as a visible break since you cannot see the disconnection point. User would still test for voltage and then ground it.
v. Francois provided a separate presentation of visible breaks.
vi. If you want UL you have to see both contacts, not just one when you are looking through viewing windows.
vii. We need to define visible break (isolation) versus visible indication.
viii. From Nenad Uzelac's notes:
Visible Break – a term coined by some US Utilities and manufacturers – refers to a disconnect switch (or disconnector) that provides a clear visible open position. A visible break is used to ensure that an electrical circuit is completely isolated for service or maintenance. It is usually not intended for normal operation, but only for safety isolation.
ix. Look at NEC 225.51 was read to the group. In definitions it is article 110.
x. There is a consensus that we should come up with a definition of what this means from the sub-committees?

b. What is it for?
i. This is for two functions. The first is in open position to provide means of visible isolation. In closed position to carry normal load current continuously and short circuit current for periods specified.
1. One person it should have load break and fault make in case the vacuum device is welded. Others say this can be solved with interlocks.
ii. Communicate to the outside world.

c. Visible indication vs visible isolation (Disconnect)?
i. See comments within A which touched on this.

d. Test requirements
i. Nenad Uzelac provided a presentation with list of documents.
1. Requirements are in C37.30.1-20111 and IEC62271-102
2. Additional requirements for integrated disconnect switches, where they provided with the solid insulation enclosed switches are covered in IEC-62271-201
3. Also C37.20.3 and C37.20.4 deal with it.
4. There are no RODE specific come from a disconnect switch standard.
ii. Proposed test is dielectrics, resistance, temperature rise, short time withstand, verification of protection, tightness test (if applicable), interlock test (if applicable).
iii. Keep visibility over the lifetime of the product?

e. Volunteers to work on this between the meetings with Francois and Nenad?
i. Eldgridge Byron, Schneider Electric
ii. Albert Livshitz, CE Power Solutions
iii. Roger Golze, Trayer Switchgear
iv. Francois Soulard, Hydro-Quebec
v. Nenad Uzelac, G&W Electric
vi. Bill Walter, We-Energies
vii. Tim Royster, Dominion Virginia Power
viii. Paul Found, BC Hydro

ix. Anil Dhawan, ComEd

They will use the document shown as point of departure.

f. Construction
    i. Not discussed
g. Safety
    i. Not discussed

5. New Business;

None

6. Next meeting:

Fall 2016 Switchgear Committee Mtg.
October 9 - 14, 2016
Sheraton Station Square, Pittsburgh, PA

7. Meeting was adjourned at 11:53 AM

Annex: Member Attendance

Count	Role	First Name	Last Name	Company	Country	2016-04-26
1	**Chair**	**Francois**	**Soulard**	**Hydro-Quebec**	**Canada**	**X**
2		Chris	Ambrose	Federal Pacific	USA	X
3		Nenad	Uzelac	G&W Electric	USA	X
4		Frank	DeCesaro	Eaton's Cooper Power Systems	USA	X
5		Paul	Found	BC Hydro	Canada	X
6		Timothy	Royster	Dominion Virginia Power	USA	X
7		William	Walter	We-Energies	USA	X
8		Jeffrey	Gieger	Thomas & Betts	USA	X
9		Anil	Dhawan	Comed	USA	X
10		Albert	Livshitz	CE Power Sol.	USA	X
11		Roger	Golze	Trayer Switchgear	USA	X
12		Wangpei	Li	Eaton	USA	X
13		Ryan	Kowdley	Pacific Gas and Electric	USA	X
14		Eldridge	Byran	Schneider Electric	USA	X
15		Travis	Johnson	Xcel Energy	USA	X
16		William	Erwst	Thomas&Betts	USA	X
17		Bill	Hurst	-	USA	X
18		Bredon	Kirkpatrick	Southern California Edision	USA	X
19		David	Dunne	Schneider Electric	USA	X
20		Pete	Kowarl	Cleveland Price	USA	X
21		Doug	Edwards	Siemens	USA	X

Total Attending 21