

# Meeting Minutes of Study Group C37.011 Guide for TRV for HV CB April 24, 2017 Charlotte, N.C.

## Introduction of members and guests

Attendees: 52

Members: 13

Guests: 39

## Approval of minutes from Fall meeting (Pittsburg)

Motion to approve the meeting minutes made by Mike Skidmore

Second: Anne Bosma

Minutes are approved.

## Discussion

The guide must be completed by 2021 to avoid a “Withdrawn” status.

Study group was planned to continue until the end of 2017, however during the meeting members that the progress of work is such that a request for PAR can be done after the spring meeting so that the first working group meeting can take place in Fall 2017.

Note: during its meeting on April 27<sup>th</sup> 2017 HVCB subcommittee gave permission to apply for a PAR.

Main purpose of the revision is to align with C37.04, C37.09, C37.06.1 and transfer some TRV content from C37.04b into C37.011.

The Chair discussed changes made, expand on some existing topics and add others (series cap banks, transient studies), to the existing document since the Pittsburg meeting.

A proposal was made, and accepted, to replace C37.081a in the document with IEC62271-101.

A proposal was made, and accepted, to delete the text referring to a HVCB task force that is reviewing the natural frequency of transformers.

Joanne Hu has provided a new section on studies and it is recommended comments on it be sent to her.

Hua Liu presented an example of a 500 kV series capacitor TRV calculation.

## Next Steps for the document

Update the draft and circulate to SG members before the Fall meeting.

Discuss new draft at Fall meeting in Portland, Maine

### Action Items

Indicate applicable factors of IEC 62271-101 for a synthetic tests for IEEE use. Jan Wiesker agreed to prepare a document that explains how asymmetric current TRV parameters are changed during testing with references to IEC 62271-101, comparison with IEEE C37.081a.

Delete text in yellow of lines 842 and 843.

Line 1517 replace 550 kV substation with 500 kV substation and do the same for the remainder of this section.

Helmut H agreed to revise sub-clause 5.4.1 to adapt equations where T2 values are replaced by t3 values.

Check that References, section 3 that IEC 62271-100 and 101 are included.

Check line 2047: the C37.06.1 title mentioning Definite Purpose CB agrees with the C37.06.1 WG.

Check line 2695 bibliography [B26]: replace with IEC 62271-101

Denis and Hua will submit for comments a proposal to include an example of TRV calculation in system with series capacitors. (Add reference to TRV comparison curves that can be used in the series capacitor example section. Comparison should be made in this case with OP TRVs.)

Study group has two recommendations for replacing EMTP with either “transient simulation program” or “electromagnetic transient program” in the study section that Joanne has provided. Joanne to review proposals and recommend acceptance of one version.

Provide Annex A document concerning TRV modeling by transient simulation with meeting minutes for those guests that have not seen it yet.

Denis to submit PAR before Fall 2017 meeting

### Roster Study Group Revision of IEEE C37.011

<b>Name</b>	<b>Affiliation</b>	<b>Attend in St Pete 2015-04</b>	<b>Attend in San Diego 2015-09</b>	<b>Attend in Hilton Head 2016-04</b>	<b>Attend in Pittsburgh 2016-10</b>	<b>Attend in Charlotte 2017-04</b>
Denis Dufournet	Consultant (Grid Solutions)	X	X	X	X	X
Joanne Hu	R&J Engineering Corporation	X		X		
Roy Alexander	RwA Engineering	X	X	X	X	
Mauricio Aristizabal	ABB	X	X	X	X	
Anne Bosma	ABB Power Technologies	X			X	X
Arben Bufi	Hitachi HVB	X		X		X
Lucas Collette	MEPPI	X	X	X		X
Helmut Heiermeier	ABB	X	X	X	X	X
Victor Hermosillo	Alstom Grid	X	X		X	
Amir Khosravi	BC Hydro		X	X		X
Jim van de Ligt	CANA High Voltage Ltd	X	X			X
Hua Y. Liu	Southern California Edison	X	X	X	X	X
Carl Schuetz	ATC	X	X	X	X	X
Sushil Shinde	ABB	X	X	X	X	X
Mike Skidmore	AEP	X	X	X		X
Kirk Smith	Eaton	X			X	
Jan Weisker	Siemens	X		X		X
Xi Zhu	GE	X	X	X		X