

Minutes of the Meeting held on
September 24th 2014 in Asheville, NC, USA

Joint IEC/IEEE revision of IEEE C37.013 to be called: High-Voltage Switchgear and Controlgear - Part 37-013: Alternating-current generator circuit-breakers

IEC TC 17 / SC 17A / WG 52 IEEE P62271-37-013

The Working Group met on September 24th 2014 in Asheville, NC, USA .
The chair started the meeting with the introduction of all participants.
The following people attended the meetings: see Annex A.

The chair summarized the present status of the development of this standard as follows:

- The IEEE Ballot of D10.4 ending March 28th 2014 was successful.
- The IEC Committee Draft for Voting (CDV) ending April 25th 2014 was successful as reported in 17A/1068e/RVC issued on June 20th 2014 .

Note From now on:

IEC rule: Only editorial [spelling, grammar and punctuation changes can be made.

IEEE rule: All changes made since March 28, 2013, have to be balloted, and any negative comment(s) must be addressed. {Only one negative was received on the previous ballot, and that was from the editor relative to references to be moved to the Bibliography. It was resolved quickly.

The IEC Editors are presently reviewing the text and focusing in great detail on the editorial changes required to meet the applicable IEC directives. As of today, they have given us advance notice of some 7000+ editorial changes to be made, which we have already addressed. Although this is a very large number of changes, once the rules are explained, most readers understand the intended meaning more clearly.

- By far the great majority involve simple formatting changes that even the most attentive reader may not even notice and do not require any discussion, but are required in order to align the structure of the text with the directives. For example:
 - Words were spelled using “U.K. English” according to IEC style rules.
 - Words were hyphenated (or not) according to the IEC style rules.
 - Numbers with decimals were changed to use the “comma” delimiter, rather than the “period” delimiter, according to IEC style rules.
 - Numbers greater than 999 are written with a “blank space e.g. 1 000” rather than a “comma e.g.1,000”.
- There are a number of “hanging paragraphs” to be corrected. The introductory text has to be included in the numbering of the subclauses, and this means that all subsequent subclauses have to be re-numbered as well. (There are also a few remaining hanging

paragraphs that cannot be corrected at this time, because this document has to follow the structure of IEC 62271-1-2010, **High-voltage switchgear and controlgear – Part 1: Common specifications**. After 62271-1 is revised, those hanging paragraphs will be corrected, and then the next time this document is revised, it can be realigned with the revised 62271-1.)

- Although there were a large number of these kinds of corrections, most readers find the new forms to be clearer, without changing the meaning.

Main points:

- Only the changes made since D10.4 was approved by ballot can be considered in the IEEE recirculation ballot.
- Note for the future: the changes from class M1000 to class M1 and class M3000 to class M2 did not have to be made after all.
- Figure 1 has been redrawn to better illustrate the characteristics of the currents and voltages during a make-break test.
- Nearly all of the other figures have been redrawn (editorially – no technical changes) to comply with the directive that all figures have to be submitted also in VISIO. At the same time, redundant lines and text that were not needed were removed for clarity.
- 4.4.2 Temperature rise
The maximum allowable temperature limit for parts of the generator circuit breaker handled by the operator was changed to 50 C. This was because the text in D10.4 was confusing in that it mentioned 50 C, 70 C and 80 C, the latter two of which were felt to be unreasonably hot. This is considered a safety issue.
Also the maximum allowable temperature limit for external surfaces of the generator circuit-breakers, not accessible to an operator in the normal course of work duties shall be no greater than 110 °C was reduced to 80 C in accordance with 62271-1, because 110 C was also considered to be too hot. Similarly, this is considered a safety issue.
- 4.8.2. Rated supply voltage
The text that had been requested by Japan, “Other control voltages may be specified according to other national or international standards depending on the point of original installation”, that had been added a long time ago Table 2 was deleted. (No reason was given.)
- 4.105 Transient recovery voltage was rewritten.
- 4.107 Excitation current switching.
The subclause including the text “No specific rating is assigned to cover the excitation switching current (see 8.103.9).” was not needed and so it was removed. And then 4.108 and 4.109 were re-numbered as 4.107 and 4.108 respectively.
- 6.5.7 was re-numbered to become 6.5.101, because there is no 6.5.7 in 62271-1
- 6.10 Additional tests on auxiliary and control circuits
This was completely re-written for clarity.
- 6.102.6 No load operation before tests
This was re-written for clarity and is more closely aligned with 62271-100.
- 6.102.7 Alternative operating mechanisms
Under item b), “the first verification test is the short-time withstand current and peak withstand current tests as described in 6.6” was removed, as it is not required in 62271-

100. The remaining verification tests were rewritten to align more closely with 62271-100. Some manufacturers of vacuum circuit breakers expressed significant concern that the short-time current and peak current withstand tests should remain, at least for circuit breakers with butt-type contacts. This is because the ability of the operating mechanism to break welds that occur at the contacts cannot be assured by no-load mechanical test and making and breaking tests alone.

- 6.102.10.2. Three-phase tests
The subclause has been re-written for clarity.
- 6.102.10.3. Single-phase tests to substitute for three-phase conditions
The subclause has been re-written for clarity.
- Figures 32A, 32B, 32C, 32D, 33A, 33B, 33C, 34, 35, ... , 50 were renumbered consecutively as 32, 33, 34, 35, 36, 37, 38, 39, 40, ..., 56 respectively. The text that refers to these figures was also changed accordingly.
- 8.103.6.3.7 Guide for the selection of the G-class of the generator circuit-breaker is quite complicated and detailed. The editors have improved the organization and wording of this lengthy subclause where they could, but the process is inherently complicated, and we realize that it is still not very easy to read and to understand.
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The WG reviewed all of the substantive changes made since D10.4 was balloted by IEEE. Although other clauses and subclauses were changed, they are not as involved as these above. And in the coming IEEE re-circulation ballot, you will have a chance to review and comment them as well.

After IEC Editors release the FDIS for ballot, they will also make it available to IEEE Editors for their review. After that the IEEE will conduct a recirculation ballot for all changes – and only the changes - that have been made since D10.4 was balloted. In the IEEE ballot like in the IEC ballot, only the changes are to be considered.

Respectfully submitted,

R. William Long, Chair Joint WG P62271-37-013 and WG-52

24 October, 2014

Annex A: List of attendees: 8 members and 8 guests

Member/Guest	Last name	First name	Affiliation	Attended Sept 24 th , 2014		
Member	Bosma	Anne	ABB	<input type="checkbox"/>		
Member	Bufi	Arben	Hitachi HVB	<input type="checkbox"/>		
Member	Carmona	Gilbert	Southern California Edison	<input type="checkbox"/>		
Guest	Cary	Stephen	Eaton	<input type="checkbox"/>		
Member	Chow	Chih	PEPCO	<input type="checkbox"/>		
Guest	Eastman	John	Incon	<input type="checkbox"/>		
Member	Falkingham	Leslie	Vacuum Interrupters Limited	<input type="checkbox"/>		
Guest	Heiermeier	Helmut	ABB	<input type="checkbox"/>		
Guest	Liu	Hua Ying	Southern California Edison	<input type="checkbox"/>		
Convenor	Long	Bill	Retired	<input type="checkbox"/>		
Guest	Mayle	Frank		<input type="checkbox"/>		
Guest	Monahan	Terry	Schneider Electric	<input type="checkbox"/>		
Guest	Swing	Donnie	Powell Industries	<input type="checkbox"/>		
Guest	Trussler	Richard	Schneider Electric	<input type="checkbox"/>		
Member	van de Ligt	Jim	CANA High Voltage Ltd.	<input type="checkbox"/>		
Member	Webb	John	ABB	<input type="checkbox"/>		