

Minutes of the Meetings held on
October 8th – 10th, 2019 in San Diego, CA, USA

Joint IEC/IEEE Maintenance Team for IEC/IEEE 62271-37-013

The Working Group (WG) met on October 8th, 9th, and 10th, 2019 in San Diego, CA USA with 12 members and 5 guests.

The meeting started with the introduction of all participants.

The following people attended the meetings:

Role	Last name	First name	Attended	Attended	Attended
			October 8 th , 2019	October 9 th , 2019	October 10 th , 2019
Guest	Bui	Ngoc	√		
Guest	Cary	Stephen		√	
Member	Chen	Steven		√	
Guest	Flack	Michael	√		
Member	Flores	Sergio	√	√	
Guest	Lafond	Michael		√	
Member	Livshitz	Albert	√	√	√
Chairman	Palazzo	Mirko	√	√	√
Member	Peelo	David		√	√
Member	Ricciuti	Anthony	√		
Member	te Paske	Henk	√	√	√
Member	Trichon	Francois	√		
Member	van de Light	Jim	√	√	√
Secretary	Westerdale	Matt	√	√	√
Member	Willieme	Jean-Marc	√	√	√
Member	Zehnder	Lukas	√	√	√
Guest	Zope	Sandeep	√		

Main points:

The proposed agenda for the three-day meeting was approved by the WG members.

An overview of the existing WG membership was provided, along with a history of past meeting locations.

The minutes of the previous meeting were discussed and a correction was made to reference the correct clause (7.5.101) for action item 89. The minutes were then approved by the working group.

A status update of the document was provided. The WG's resolution to the received comments (Annex A and B from the last meeting in Berlin) were presented and the following additional discussions occurred:

- IEC comments #81-82: The WG discussed clause “7.102.10.2.3 Three-phase asymmetrical breaking operations” and a comment to request the limit be from 100% to 110% for: “product of the peak and the duration of the current during the last loop prior to the interruption is between 90 % and 110 % of the required value.” Other tolerances would need to be increased for three-phase to implement this comment and additional study would be necessary to account for the other consequences. Also, the existing revision of 62271-37-013 aligns with IEC 62271-100, but differs with IEEE C37.09-2018.
 - The WG will follow-up with the new IEEE Adhoc and PAR working group that was formed in San Diego, CA to begin to make corrections to C37.09. The WG will indicate that C37.09 should be harmonized with 62271-100 and 62271-37-103 based on the outcome of the discussion of IEC comment #81 in the IEC meeting next week in Shanghai, China.
- IEC comment #98: The WG discussed the allowed 20% margins in points c) and d) of clause “7.102.10.3.2 Single-phase symmetrical breaking operations”. A proposal was made by Henk te Paske and Lukas Zehnder to add clarification to point d) and change the margin to 10% in point d) and c), which was accepted by the WG. Revisions to point d) in clause 7.102.10.2.2 and Annex A were made to ensure these clauses are in agreement with one another.
 - Jean-Marc Willieme also proposed to include similar information in the asymmetrical sections to provide consistency, which was accepted by the WG.

The WG discussed and made revisions to clauses 7.102.10.2.2, 7.102.10.2.3, 7.102.10.3.2, and 7.102.10.3.3 to provide consistency and correct statements. These discussions and revisions are likely to continue in future WG meetings and after feedback from the IEC meeting next week.

The WG reviewed the comments received from Haojun Liu on revision 26 of the document and developed resolutions, which are detailed in Annex A.

Lukas Zehnder provided a proposal to change the “minimum functional pressure for interruption and insulation” wording throughout the document to “minimum functional pressure (density) for insulation and switching”, as this is more accurate and aligns with 62271-1. The WG accepted this proposal and made several updates to use consistent wording throughout the document.

David Peelo presented his position and concerns regarding the TRV calculation method. The WG agreed to provide additional explanation of the approach used to derive the TRV parameters influenced by the capacitors of the GCB to address these concerns (action item 92).

The WG and David Peelo also came to an understanding regarding Canada’s IEC comment #141 (from Annex A in the comment resolution attachment from the last meeting in Berlin) on Annex J, K, L, and O. These annexes will be retained in the standard. If a Cigre working group is formed to address these topics, then the WG will consider this information in a future revision of the standard.

Mirko Palazzo reviewed his presentation for the IEC general meeting in Shanghai, China with the WG. This presentation included a report of voting on the document, membership, and “not accepted and accepted in principle” comments from the last ballot. Discussions occurred and the WG provided comments on the presentation.

Next Steps and Agreed Actions:

Action numbers 68, 69, 70, 72, 73, 74, 87, 88, and 89 were presented to the WG and are now completed.

Action number	Action description	Responsible	Status	Deadline
1	Develop an Annex in which a step-by-step procedure for the reproduction with computer simulations and in test laboratories of the prospective TRV for load current and out-of-phase current switching modified by the capacitors of generator circuit-breakers is described. Develop a set of formulas to calculate the actual TRV parameters depending on capacitors at each side of the GCB for each row of Table 6.	Henk te Paske, Mirko Palazzo	Ongoing	31.12.2019
68	Ensure the term power-frequency is used in IEC 62271-100 as well	Joachim	Completed	30.04.2019
69	Share Figure 1 developed by Sergio F. with Anne Bosma and MT36 for use in IEC 62271-100 for alignment purposes	Mirko	Completed	31.07.2019
70	Introduce formula for asymmetrical system-source and generator-source short-circuit breaking currents in cl 9.103.6.3.2 indent b)	Mirko	Completed	31.07.2019

Action number	Action description	Responsible	Status	Deadline
71	The documents not referred to in the standard will be removed from bibliography and the remaining ones will be re-ordered by order of appearance.	Mirko	Not started	30.09.2019
72	Figure 7: remove term "valid" from title and change text in the figure to: interruptions at these zeroes establish time t1 and add 2 more arrows with corresponding t1	Henk	Completed	30.09.2019
73	Figure 8: remove term "valid" from title and change text in the figure to: interruptions at these zeroes establish time t2 and add 2 more arrows with corresponding t2	Henk	Completed	30.09.2019
74	Implement formula for altitude-related correction (comment 33 from IEC)	Lukas	Completed	30.09.2019
75	Make a proposal for the new Annex to explain the differences between 60060-1 and GCB standard regarding correction factors in 7.2.2.102 (comment 51 from IEC)	Lukas	Not started	30.11.2019
76	Amend Figure 22 as per IEC comment 85, 87	Lucas	Not started	30.09.2019
77	Amend Figure 21b as per IEC comment 86	Lucas	Not started	30.09.2019
78	Amend Figure 23 as per IEC comment 88, 89	Lucas	Not started	30.09.2019
79	Amend Figure 23 as per IEC comment 92	Lucas	Not started	30.09.2019
80	Amend Figure 24 as per IEC comment 93, 94	Lucas	Not started	30.09.2019
81	Amend Figure 25 as per IEC comment 95, 96	Lucas	Not started	30.09.2019
82	Amend Figure 26 as per IEC comment 101	Lucas	Not started	30.09.2019
83	Amend Figure 27 as per IEC comment 103, 106	Lucas	Not started	30.09.2019
84	Amend Figure 28 as per IEC comment 107	Lucas	Not started	30.09.2019
85	Amend Figure 29 as per IEC comment 108, 109	Lucas	Not started	30.09.2019
86	Amend Figure 40b) as per IEC comment 116	Lucas	Not started	30.09.2019
87	Review cl. 10 as per IEC comment 125 and align with 62271-1 cl. 10	Jean-Marc	Completed	30.09.2019
88	Implement Figure 1 from Sergio including his latest input on U2/I2	Mirko	Completed	30.09.2019
89	Prepare a proposal for 7.5.101 to cover the case of loss of cooling of IPB	Lukas	Completed	30.09.2019
90	Check all figures with oscillograms in red, blue, yellow colours	Henk	Not started	15.12.2019

Action number	Action description	Responsible	Status	Deadline
91	Define what mechanical characteristics as per 7.101.1.1 and annex C are and how they should be used throughout the document	Lukas, Denis	Not started	31.01.2020
92	Describe approach used to derive the TRV parameters for out-of-phase and load current switching when modified by the capacitors of the GCB	Mirko	Not started	30.11.2019

Future Meetings and Schedule:

The next meeting is tentatively planned to take place in Lyon, France starting on December 16th around 12 pm to December 17th at 5 pm. Online meeting capability is planned to be established for this meeting.

A second meeting is tentatively planned to take place in Bergamo, Italy or Lyon, France on February 20th and 21st.

Further coordination on the next meetings will occur within the working group to provide more specific details as the meeting dates approach.