

IEC 62271-111 / IEEE C37.60 Working Group Meeting
Minutes
15-16, October, 2024
Oklahoma City

Chair: Ian Rokser

Secretary: Federico Di Michele

1. Call to Order:

The meeting will be called to order.

Meeting started on October 15th at 14:02.

Meeting started on October 16th at 14:00.

2. IEEE SA Patent Policy and IEEE SA Copyright Policy

IEEE Patent and Copyright slides will be shown.

Chair showed slides about patents and policy. No remark.

3. Introductions and Declaration of Affiliation (Working Group Establishment)

Self-introductions with affiliations.

Members and guests introduced themselves and affiliations.

Chair explained that an attendance is considered valid if a member/guest will attend at least 2 of 4 sessions in accordance with IEEE rules. So a presence sheet for each session will be released.

Quorum at the beginning of the session on October 15th has been met (18 members).

Quorum at the beginning of the session on October 16th has been met (17 members).

4. Review of minutes of last meeting

August 1st 2024, Virtual meeting – minutes distributed 9/5/2024

Motion to approve agenda by Leslie Falkingham and David Beseda seconded. No comments, no oppose, no abstention. Approved by consent.

Motion to approve minutes by Frank DeCesaro and Kennedy Darko seconded. No comments, no oppose, no abstention. Approved by consent.

5. Current status & project plan

Updating regarding activities status and future steps.

Chair presented the project plan explaining that IEEE and IEC ballot during next months (from December to February) to proceed with a common comment resolution at the next IEEE Spring meeting in Orlando.

A member suggested to double check the IEEE period which could be longer due to the presence of many holidays. Confirmation was given by IEEE staff that a longer ballot period (>30 days) is allowable but not required.

Chair explained that there will be no face-to-face meeting in Europe due to the ballot ongoing during the same period, however the DLMT should tentatively plan for an in-person meeting during June/July if further discussions on comment resolution are needed after the IEEE Spring meeting. Please inform the chair and secretary if you are interested in hosting this meeting.

6. Internal ballot comment resolution

Summary of internal ballot.

Resolution of internal ballot comments marked for DLMT discussion by the comment resolution group.

Distributed to all members, 23 member/guests responded with 363 comments. A comment resolution group has checked most of them and just 44 still to be discussed with the DLMT (3 editorial, 5 general and 36 technical).

Chair explained that comments which has been solved by comment resolution group and sent to the DLMT as “pre-reads” will be not discuss further unless any other member/guest would like to discuss any of them. Two comments were requested to be discussed by email prior to the meetings (#228, #284). No additional requests for discussion were made during the meeting. The remaining “pre-read” requirements are approved as dispositioned by the comment resolution group.

Remaining comments have been grouped as follow:

- Ungroup (1)

- Index 206: Frank De Cesaro will confirm the requirement from IEEE.
- Index 251: a member highlighted that the proposal, as it is, is assuming that manufacturer knows that control power is provided using a PT. in this case we should add a note about the responsibility of the user to inform the manufacturer in advance. A member added to not mention voltage because it is an American voltage.
 - **Paul Found** take action to make a proposal solving the comment.
- Index 316: SI unit should be used for standards, but for DLMT is typical to use both SI and US units, so comment rejected.
- Index 203: the comment was in principle accepted, however it is not clear for a member if clearing time includes the arcing time, because from the sentence of annex F it looks no, but from the figure K.1 it looks yes, so one of the two should be corrected.
 - Further check on this topic will be managed through and ad hoc composed of **Ian, Sergey Rogozhkin, Pedro Castillo, Marcos Botelho, Chris Ekpoudom, Todd Grdina**. So, the comment will be revised and not accepted as it is. This can be implemented after the ballot.
- Index 114: Chair presented the work prepared by a task force for IEEE C37.100.1 in 2021, about altitude correction factor, which proposed to use a “lower curve” starting from m=0 at 1.000m altitude. This work has been accepted and implemented in IEEE C37.100.1. DLMT agrees to accept the comment, but as suggested by a member, it is preferable to refer directly to IEC 62271-1.
- Index 119: the new definition is specifically referring to clearing, but the previous one was more generic. However, this is not a generic definition, but a legend for the figure, which is referring to clearing.
 - So comment will be checked by previous ad hoc too – **Chair, Sergey Rogozhkin, Pedro Castillo, Marcos Botelho, Chris Ekpoudom, Todd Grdina**. This can be implemented after the ballot.
- Index 254: IEEE has recognized a lack on this topic, so it is moving to recover the gap. In principle the comment could be accepted but it will be implemented only when IEEE will

publish something to which refer to. To be evaluated if in the meantime a reference to IEC is possible.

- **Marcos Botelho and Pedro Castillo** will check together reference standards. This can be implemented after the ballot.

- Index 343: the reasons to change are to avoid issue with TRVs and X/R values, which are currently calculated starting from circuit-breaker values, the reasons to not change are historical and linked to the need to maintain a clear distinction between recloser and circuit breaker given the different application of circuit-breaker and recloser (longer electrical endurance life).

Kirk Smith makes a motion to reject the comment, because the TRV issue is just related to the TRV values with short-circuit current higher than 4 kA. Caryn second.

IEC vote: 5 approve – 0 reject – 0 abstention

IEEE vote: 20 approve – 1 reject – 1 abstention

Chair abstains too.

Motion approved, then comment rejected.

- Ungroup (2)

- Index 318: simultaneous operation, which meet the definition given in the standard, can be tested meeting the peak requirement. The same would be not possible for non-simultaneous operation, however it would be still possible to define application with not simultaneous operation. This comment will be deferred.
- Index 303: reject the comment because already discussed in Milano meeting (January 2024) and stated in the relative minutes.
- Index 219: same as Index 303.
- Index 269: Ice loading test.
 - **Robert Hinshaw and Peter Agliata** will review the comment and develop a proposal to resolve it. This can be implemented after the ballot.
- Index 360: the discussion ongoing is focusing on two possible scenarios, keep both figures or remove all of them referring directly to figure 4 and changing the verbiage of annex B. The DLMT chose the second scenario.

At the beginning of third session, the Chair explained the proposal to defer some comments (13), which could need longer discussion, or which need ad hoc to prepare a proposal, focusing on the other. These comments will be not part of the document will be shared and used for IEC and IEEE ballots, however Chair recommends proposing again these comments during the official ballots. These are the comments deferred:

Index #	Line #
318	1269
225	1604
226	1724
280	1732
228	1746
237	1883
239	1901
241	1930
281	2060
283	2063
348	2471

231 3433

344

- Line and cable charging:

- o Index 286: comment accepted in principle but changing the current verbiage to a note.
- o Index 287: Eric explained that lab could have issue to meet C1/C0 ratio, so he is proposing to allow higher values upon agreement with the manufacturer. A comment was made that the C1/C0 should have an upper bound or maybe require that C0 be presented to avoid extremes.
 - **Sergey Rogozhkin, Harm Bannink, Victor Savulyak and Eric (Qian) Li** volunteered to make a proposal to solve the comment.

- Making current test

- o Index 227: CRG proposal not accepted. Comment that “open” is also not right as it implies that the non-interrupting gap opens after making.
 - **Tanner Buel, Leslie Falkingham, David Beseda and Harm Bannink** volunteered to solve the comment.

- Fault duties:

- o Index 232: comment rejected because 100% recovery voltage is anyway typically required by the lab to meet the 95% at the fourth operation.
- o Index 136: the comment is accepted in principle changing the kpp' with kp2.
 - **Mohit Chhabra** volunteered to check circuit-breaker standard to understand if kp2 is the right verbiage (maybe it should be kpp2). Please complete this work by 10/21 to allow the TRV ad hoc to complete its work.
- o Index 240: in principle the DLMT rejected the comment, however considering that kpp=1,3 procedure should be re-checked due to the differences with the kpp=1,5 procedure, then this comment could still be considered.
- o Index 299: kp will be revised to kpp as general pole-to-clear factor and additionally annex D will be revised adding extra explanation.
 - Existing ad hoc working with TRV will take care of make a proposal. Please complete this work by 10/25.
- o Index 300: same as Index 299.
- o Index 266: the applicability of the load current switching tests (replacing the low current tests) is based on three conditions, existing of a critical current, recloser components aiding in low-current interruptions and in case of new technology which could be not able to switch such a kind low current. The last point is not clear and there is still a discussion about the proposal to keep point c), remove it or modify it. At the end the DLMT decided to keep this comment not resolved and move on with the ballot with the current draft. This comment is deferred.
- o Index 349: the word “over” seems something that is going beyond this value, but this is not the intention. The proposal is to replace this word with “for”. Also, ambiguity was noted in the definition of the rise time requirement. The DLMT could not reach consensus.
 - **Frank DeCesaro and Cody Marshall** volunteered to solve this issue. This can be implemented after the ballot.

- SSAO

- The comments about SSAO has been checked and solved by a specific ad hoc. All comments will be accepted or rejected or revised depending on the work of the ad hoc, with the exception of following comments which needed further discussion:
 - Index 162: Test set-up points listed in 7.111.2.2, d) and e) are redundant, keep just one. The proposal is to keep e).
 - The SSAO ad hoc (**Mark Feltis – Lead, Sergey Rogozhkin, Chris Hastreiter, David Dart**) will continue to work on this item. **Marcos Botelho** is volunteered to join the ad hoc too. Please complete this work by 10/25.
 - Index 324, Figure 5. The figure shows a circuit which is focusing on a specific application, however more applications could be possible, so the device should be tested at its own configuration.
 - The ad hoc will continue to work on this topic too. This topic is deferred, but the ad hoc is encouraged to continue to work on this topic even after the ballot process has started so we are prepared to address it after the ballot closes.
 - Note to Figure 7. Comment accepted.
 - As a result of Mark’s review of the revised subclause 7.111.2, the following comments on SSAO are accepted as presented:
 - 165, 182, 278, 186, 187, 188, as well as several dozen comments resolved in the “pre-read” lists

- Restrike limit:

- Index 284: the proposal solving the comments is accepted in principle, however it still needs to be revised clarifying how to manage a restrike happening during 1 second after the operating sequence.
 - **Chair** to draft language for this.

7. **Open work**

Preparation for initial sponsor ballot (IEEE) and CD1 (IEC)

- *Requesting DLMT approval to move to ballot upon completion of internal ballot comments (postpone to email ballot if necessary)*

Motion to request approval from RODE subcommittee to go to ballot. Kirk first, Chris H second. 20 Approve, 0 oppose, 1 abstention. Motion approved.

8. **Next steps / Future Meetings**

Finish resolution of internal ballot comments – by 10/25

Update the draft standard.

Form ballot pool and submit draft for MEC (IEEE).

Submit draft to secretariat and issue Review Report (IEC).

The Chair suggested that the DLMT plan to have the face-to-face meeting in Europe in June/July 2025.

9. **Adjourn**

Meeting adjourned on October 15th at 18:00.

Meeting adjourned on October 16th at 17:10.

ATTENDANCE LIST

Status	Last name	First name	Affiliation	Attended October 15th- 16th 2023 Fall meeting
Convenor	Rokser	Ian	Eaton - IEC USA	X
Secretary	Di Michele	Federico	CESI - IEC Italy	X
IEC Member	Bannink	Harm	G&W - IEC Netherlands	X
IEC Member	Botelho	Marcos	Siemens - IEC Germany	X
IEC Member	Dart	David	Noja Power - IEC Australia	
IEC Member	Falkingham	Leslie	Representing VIL and S&C - IEC United Kingdom	X
IEC Member	Kerr	Blair	G&W - IEC USA	
IEC Member	Ptushko	Sergey	IEC Russia	A
IEC Member	Kou	Zhengli	IEC China	
IEC Member	Manavar	Suresh	IEC United Kingdom	
IEC Member	Micic	Stefan	G&W - IEC USA	X
IEC Member	Kim	Yun Seong	KERI	
Member	Rogozhkin	Sergey	Tavrida	X
Member	Bush	Kelsey	ABB	X
Member	Hirz	Harry	VESCO	A
Member	Darko	Kennedy	G&W	X
Member	Feltis	Mark	Schweitzer Eng	X
Member	Kapitula	John	ABB	X
Member	Li	Eric (Qian)	Powertech Labs	X
Member	Neujahr	Jonathan	Eaton	
Member	Olivares	Roberto	Siemens	
Member	Riley	Caryn	NEETRAC	X
Member	Slattery	Christopher	First Energy	X
Member	Trost	Karla	G&W	X
Member	Zhou	Xin	Eaton	
Member	Balasubramanian	Ganesh K	Eaton	X
Member	Beseda	David	S&C	X
Member	Ekpoudom	Chris	Southern States	X
Member	Stemmerich	Joe	Trayer Engineering Corporation	X
Member	Herring	Ricky	Siemens	
Member	Castillo	Pedro	ABB	X
Member	Marshall	Cody	Schweitzer Engineering Laboratories	X
Member	Sigmon	Hall	Siemens	
Member	Hastreiter	Chris	Eaton	X
Member	Chhabra	Mohit	S&C Electric	X

Member	Kirkpatrick	Brendan	SCE	A
Member	Dhawan	Anil	Allegis Groups	A
Member	McKinney	Kenneth	UL solutions	
Member	Busilan	Dan	Dominion Energy	X
Member	Found	Paul	BC Hydro	X
Member	Agliata	Peter	S&C Electric	X
Member	DeCesaro	Frank	DeCesaro Consulting Solutions	X
Member	Smith	Kirk	Retired	X
Member	Sax	Benjamin	Nashville Electric Service	X
Member	Miranda Garcia	Sergio	ABB	X
Member	Hatfield	Ben	Trayer Engineering Corporation	X
Guest	Kirienko	Vladimir	Tavrida Electric	X
Guest	Shocket	Abe	ABB	X
Guest	Lovins	Colby	Federal Pacific	X
Guest	Fernandes	Andrew	Trayer Engineering Corporation	X
Guest	Soulard	Francois	Hydro-Quebec	A
Guest	Buel	Tanner	S&C	X
Guest	Avila	Jesus	ABB	X
Guest	Hinshaw	Robert	Hubbell	X
Guest	Bronsveld	Arjan	Hitachi Energy Sweden	X
Guest	Grdina	Todd	Siemens	X
Guest	Borck	Chris	Eaton	X
Guest	Savulyak	Victor	KEMA Labs	X
Guest	White	Robert	Oklahoma G+E	X
Guest	Mucha	Martin	G&W	X
Guest	Shah	Jamal	AVANGRID	X