IEC 62271-111 / IEEE C37.60 Working Group Meeting
Minutes
8-9, April, 2025
Orlando

Chair: Ian Rokser

Secretary: Federico Di Michele

1. **Call to Order:**
   The meeting will be called to order.
   Meeting started on April 8th at 14:03.
   Meeting started on April 9th at 08:00.

2. **IEEE SA Patent Policy and IEEE SA Copyright Policy**
   IEEE Patent and Copyright slides will be shown.
   Chair showed slides about patents and copyright 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 first session on April 8th has been met (22 members).
   Quorum at the beginning of the second session on April 8th has been met (23 members).
   Quorum at the beginning of the third session on April 9th has been met (24 members).
   Quorum at the beginning of the fourth session on April 9th has been met (22 members).

4. **Review of minutes of last meeting**
   October 15th-16th 2024, IEEE PES Fall meeting – minutes distributed 25/10/2024
   Motion to approve minutes by Karla Trost and Leslie Falkingham seconded. Sergey Rogozhkin mentioned that his company indication is wrong (Tavrida should be Tavrida Electric). No further comments, no oppose, no abstention. Approved by consent.
   Motion to approve agenda by Leslie Falkingham and Caryn Riley 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 explaining that IEEE and IEC ballot is finished and to hold the schedule comment resolution must be completed by end of May.

Chair explained that next ballot is planned in the summer. Being vacation period, the ballot time will be long enough to allow participation.

6. **Ballot Comment resolution**

Summary of initial IEEE sponsor ballot and first IEC Committee Draft (CD1)
Resolution of ballot comments marked for DLMT discussion by the comment resolution group
Assignment of actions and ad hoc groups

127 comments from IEEE and 136 comments from IEEE have been received. A comment resolution group has checked most of them (up to February 28th) and just 58 still to be discussed with the DLMT.
Chair explained how we intend to manage the comment resolution form following the IEC one and then modifying it in the IEEE one once it is time to upload it on IEEE My project.
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. Some comments were requested to be discussed by email prior to the meetings and they have been added in the 58 mentioned above. No additional requests for discussion were made during the meeting. The remaining "pre-read" requirements are approved as dispositioned by the comment resolution group.
Sergey Rogozhkin commented that his proposal is just to move EMC tests out of SWC.
Remaining comments have been grouped as follow:

- SSAO:
  - Chair read all comments received on this topic and included in this group.
  - For comment 190, Frank DeCesaro makes a motion to remove item d) from subclause 7.111., because already covered by items e) and f), which are not earthed recloser. Karla Trost seconded.
    The discussion was since point d) is at the end saying that that recloser must be earthed, if an earth connection is needed. So it cannot be considered not earthed.
    18 votes approved. 5 abstentions.
    Motion approved.
  - For comment 5, an ad hoc group has been formed: **Sergey Rogozhkin (leader), Frank DeCesaro and Chris Hastreiter.**
- Making current tests:
  - For comment 119 and 120 an ad hoc group has been formed: **David Beseda (leader), David Dart and Harm Bannink.**
- Terms:
  - For comments 9 and 10, IEC requires to have capital letter for AC and DC. The template is based on IEC, so IEC rules apply.
  - For comment 216, SF6 gas should be change to another word including other type of gases. **Karla Trost** takes the action to make a proposal.
  - For comment 229, the comment is in principle accepted, but Frank DeCesaro takes the action to double check the calculation beyond table A.1 to have the correct rounding.
- Minimum tripping current:
  - For comment 169, **Karla Trost** takes the action to make a proposal.
- X/R and TRV:
  - For comments 4, 141 and 227, X/R is changing depending on the different recloser application and ratings and it has two impacts on TRV. First one is based on time constat, and the second one is the prospective TRV which is the highest value of TRV can be reached.

If the TRV peak calculation is not influenced by X/R, then it could make sense to reduce the TRV peak value in case of lower X/R, because otherwise the value risks to be not met. Three possible scenarios: keep X/R as it is and introduce a correction factor for TRV peak value; introduce a unique X/R value (as for circuit-breaker) and keep TRV tables; keep X/R and introduce the formula for TRV (no table anymore).
The DLMT discussed to keep the X/R because it is there for historical reasons to cover specific old technologies and to introduce a correction factor for TRV peak value.
Additionally, if table 10 is considered solid for historical reasons, then TRV tables should be aligned accordingly to avoid inconsistency. An ad hoc has been formed to make a proposal: **Harm Bannink (leader), Sergey Rogozhkin, Eric Li, Victor Savulyak, Ganesh Balasubramanian, Mohit Chhabra, Pedro Castillo and Jesus Avila.**

- For comment 178, for method B TRV parameters are not important, but it has been proposed to add this as a note. It was noted that Arcing time 'may be obtained' in Method A which leaves some options for how the data is provided for the calculation. There is a suggestion to eliminate method B. Manufacturers were asked if they felt Method B should be kept. There were no responses. A question asked if running the tests at a lower primary voltage if this would hide an EMI issue. The answer was that it would be seen by performing Method A. Chair made a motion to remove Method B from 7.108.2.2. Seconded by Leslie Falkingham.
  16 votes approved. 5 abstentions.
  Motion approved.
- For comment 124, 131 and 134, an ad hoc group has been formed: **Sergey Rogozhkin (leader) and Harm Bannink (possibly Kirk Smith for this ad hoc).**

- Restrike & reignition
  - For comment 105, if a re-ignition occurs followed by a restrike, the restrike happened under a non-representative service condition. Therefore, the restrike should not need to be counted. It was noted by a member that a re-ignition is a normal event in the interruption of an arc, so it should not be mentioned. Therefore, whatever happens after a re-ignition is a service condition. It was noted that this is the general subclause. After this, restrikes are counted, re-ignitions are not. The intent is that phenomena seen in the lab, due to the artificial circuits, is not necessarily representative of field conditions. Leslie Falkingham made a motion to remove "a re-ignition" from the sentence in 7.101.1. Harm Bannink seconded. Kennedy Darko moved to call to question. Caryn Riley seconded. 18 votes approved. 1 vote opposed. 2 abstentions. The motion to call the question passed. So, referring to the motion. 9 votes approved. 4 votes opposed. 9 abstentions. Based on the p&p, the abstentions are not counted. Therefore, motion approved.
    Continuation of comment 213, referring to 7.112.1, it is asked that the duration of the restrike current" needs to be defined. It is not clear if a re-ignition can occur after a restrike, however 3.1.109 indicates that the clock is reset with the resumption of current, so it was brought up that the 2nd event, as discussed in the previous session was to be considered 'not normal'. There was a discussion on if we were answering the comment or reviewing the proposal. The comment is about 'duration of the restrike current'. The commenter was in the meeting and spoke about a real case where a restrike was followed by a reignition and the total time exceeded one half-cycle. The chair called for volunteers to form an ad hoc to review the definitions and the comment to determine if changes are needed and if needed,

provide a proposal. Following people volunteered: **Peter Agliata, Tanner Buel, Chris Slattery, Sergey Rogozhkin, Sergio Miranda and Ganesh Balasubramanian**.

- Test voltage single phase recoser
    - For comment 133 and 156 related to 7.103.3, it was originally suggested that this is how the system works (potential for full rated voltage across 2 remaining phases). A member requested review. A user spoke of their experience with this occurrence. They agree it could be a hazardous condition but can also occur with a single-phase fuse operating. In their opinion, the utility has to determine their level of acceptance and training. Two additional users agreed with this view and experience. A question was brought up regarding single phase recloser (in a cut-out) and if that could impact this phenomenon negatively. It does not appear to be an issue. The commenter spoke that they understand what is said but still have a concern. A user shared their mitigation strategies: limit the application on their system to single phase loads, single phase trip/ 3 phase lockout or 3 phase trip/ 3 phase lockout, customer interconnection requirements to protect their equipment for this potential occurrence. The user would not object to an informative note, although they reiterated the utility should already be aware of it. The informative note could become country specific which is not desired by IEC. It was noted that there is an option to do a country 'wrapper' to add language that would be specific on top of the published standard. Question on if this topic is country specific (single phase devices on ungrounded systems.) The chair is proposing to reject the comments. There were no objections to rejecting the comments. These comments are rejected.
- Kpp
    - For comments 132, 145, 146, 153, 123 and 140, related to kpp, an ad hoc group has been formed: **Chair (leader), Harm Bannink, Stefan Micic and Tanner Buel.**
- Numbering: Chair proposes to change the subclause numbering 3.1.101, etc., which typically indicates definitions not included in the IEC 62271-1, to numbering 3.1.1, which can be easily managed in word. Chair takes the action to add an informative verbiage to explain that 3.1.1 terms are unique of this document. The proposal is approved by consent.
- Other fault duties
    - For comment 144, which refers to footnote b of table 10, **Chair will lead an ad hoc group composed of Harm Bannink, David Besada, Travis Johnson, David Dart, Peter Agliata, Sergio Miranda, Ganesh Balasubramanian, Leslie Falkingham, Robert Hinshaw, Pedro Castillo and Dan Busilan.**
    - For comment 142, the +0% tolerance is probably due to historical reasons, however it can have impact on the TRV issues faced above. Two possible scenarios: accept the comment and add a + tolerance or change the duty name to T17 or something similar. This topic was not concluded and will be revisited in a future DLMT meeting.
    - For ungrouped comment 44, the word "install" is not the more appropriated, however using "close" is going against the scope of the standard, which does not include devices that needs dependent manual operation. One proposal is to use the word "place back", but final decision is to use "should not be returned to the service position". DLMT accepts the change. This comment is accepted in principle.
- Ungrouped:

    For comment 212, Harm Bannink and Stefan Micic take the action to propose if for line/cable charging has sense to keep 20% delta in the resistance measurement as for

current technical change or come back to 100% as for previous edition (equivalent to fault duties). They will check the requirement of other products too.
    - For comment 110, the proposal response is acceptable in principle, the current main method will be removed, the alternative will become the main and both notes will be removed or changed. An ad hoc has been formed to make a proposal: **Pedro Castillo, Kennedy Darko, Sergey Rogozhkin and Stefan Micic**.
- Proposal on Ice loading pass/fail criteria: the proposal to change the wet power frequency test to dry power frequency test at the end of the ice loading sequence (without mentioning specific item, because the order of the item execution could vary) has been accepted. DLMT accepts the proposal shown below:
    - Current wording: "Further, following sequences b) and c) above, the device shall successfully go through a power-frequency wet withstand test to verify that the dielectric withstand performance has not been compromised.
    - Proposed wording: "Further, following sequence d) above, the device shall successfully go through a power-frequency dry withstand test according to section 8.2 to verify that the dielectric withstand performance has not been compromised.
    - This proposal is the outcome of an ad hoc group which was opened at the fall 2024 meeting and whose work was concluded and presented at the spring 2025 meeting.
- SWC modification: comment 34, Proposal on EMC tests to be moved on subclause 7.9: the comment will be not accepted because it may lead to misunderstanding, as current version and verbiage is considered clear enough.
- Dead time
    - For comment 16 and 257, an ad hoc has been formed to make a proposal: **Marc Feltis (leader), Karla Trost, Sergey Rogozhkin, Chris Hastreiter, Todd Grdina, Chris Ekpoudom and Cody Marshall**.
- PD pre stress:
    - For comment 218: DLMT felt that a minimum pre-stress voltage should be specified in 8.102. An action was assigned to propose a minimum pre-stress voltage based on other related standards.
- Proposal of "triple single" reclosers as 3ph ganged (not linked to a specific comment) – the proposal was made to clarify whether a "triple single" recloser tested single-phase through 7.103 is also suitable for use as a three-phase recloser. To address the topic double checking other standards which have already a specific procedure covering the topic (e.g., circuit breaker standards for HV gear), an ad hoc has been formed: **Harm Bannink, Todd Grdina, Chris Ekpoudom, Mohit Chhabra, Pedro Castillo, Sergio Miranda, Travis Johnson, Jesus Avila, Eric Li and Chris Slattery**.

7. **Next steps / Future Meetings**

Complete assignments and ad hoc groups
Finish resolution of ballot comments
Update the draft standard

The Chair explained that ad hoc should work to complete their work in middle of May. A virtual meeting will be organized to continue with the ballot comments. There is the possibility for a face-to-face meeting in Europe in the summer- Chair is still unsure if his company will allow him to travel, but promised to give 60days notice if the meeting in Europe will be possible. Last scenario is that comment resolution will be completed at the IEEE PES Fall meeting, but this will delay the current plan.

8. **Adjourn**

Meeting adjourned on April 8th at 18:00.

Meeting adjourned on April 9th at 11:58.

ATTENDANCE LIST

Status	Last name	First name	Affiliation	Attended April 8th-9th 2025 Spring 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	
IEC Member	Dart	David	Noja Power - IEC Australia	X
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	
IEC Member	Gubanov	Sergey	IEC Russia	
IEC Member	Zakirianova	Regina	IEC Russia	
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 Electric	X
Member	Bush	Kelsey	ABB	X
Member	Hirz	Harry	VESCO	
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	Riley	Caryn	NEETRAC	X
Member	Slattery	Christopher	First Energy	X
Member	Trost	Karla	G&W	X
Member	Balasubramanian	Ganesh K	Eaton	X
Member	Beseda	David	S&C	X
Member	Ekpoudom	Chris	Southern States	X
Member	Stemmerich	Joe	Trayer Engineering Corporation	

Member	Castillo	Pedro	ABB	X
Member	Marshall	Cody	Schweitzer Engineering Laboratories	X
Member	Sigmon	Hall	Siemens	
Member	Hastreiter	Chris	Eaton	A
Member	Chhabra	Mohit	S&C Electric	X
Member	Kirkpatrick	Brendan	SCE	
Member	Dhawan	Anil	Allegis Groups	
Member	McKinney	Kenneth	UL solutions	
Member	Busilan	Dan	Dominion Energy	X
Member	Found	Paul	BC Hydro	A
Member	Agliata	Peter	S&C Electric	X
Member	DeCesaro	Frank	DeCesaro Consulting Solutions	X
Member	Smith	Kirk	Retired	
Member	Sax	Benjamin	Nashville Electric Service	
Member	Miranda Garcia	Sergio	ABB	X
Member	Hatfield	Ben	Trayer Engineering Corporation	
Member	Savulyak	Victor	KEMA Labs	X
Guest	Johnson	Travis	Xcel Energy	X
Guest	Kirienko	Vladimir	Tavrida Electric	X
Guest	Shocket	Abe	ABB	X
Guest	Lovins	Colby	Federal Pacific	X
Guest	Buel	Tanner	S&C	X
Guest	Avila	Jesus	ABB	X
Guest	Hinshaw	Robert	Hubbell	X
Guest	Grdina	Todd	Siemens	X
Guest	Lee	Michael	PG&E	X
Guest	Pruitt	Al	Durham	X
Guest	Villa	Augusto	S&C	X
Guest	Diallo	Boubacar	Southern States	X
Guest	Jain	Rahul	S&C	X