IEEE PC37.74 Working Group Meeting
Minutes
April 8th, 2025,
Orlando FL.

Chair: Kennedy Darko

Secretary: Travis Johnson

1. **Call to Order:**
   The working group chair called the meeting to order at 8:00 AM EST.

2. **Introductions and Declaration of Affiliation (Working Group Establishment)**
   Affiliation FAQs: http://standards.ieee.org/faqs/affiliation.html
   Members and guests introduced themselves and stated affiliations.

3. **Establishment of Quorum:**
   Quorum established; 17 of 22 members present. (First Session)
   Quorum established; 17 of 22 members present. (Second Session)

4. **Approval of Agenda:**
   Motion to approve Colby Lovins.
   Karla Trost seconded the motion.

5. **Approval of Fall 2024 Meeting Minutes:**
   Chair presented previously distributed minutes:
   F24RODEWG3774_Minutes 2024Oct14 R2
   Approved by Consensus

6. **IEEE SA Patent Policy: Call for Patents**
   https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf
7. Chair presented slides – No comments.

8. **IEEE SA Copyright Policy:** https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/copyright-policy-WG-meetings.potx
   Chair presented slides – No comments.

9. **IEEE SA Participant Behavior: https://standards.ieee.org/wp-content/uploads/import/documents/other/Participant-Behavior-Individual-Method.pdf**
   Chair presented slides – No comments,

10. **Presentation(s) / Technical Presentation(s), Contribution(s), or Discussion(s)**
    Resolution of outstanding comments from ballot #2 (Mainly Peak withstand testing)
    H. Bannink presented in the Fall 2024 meeting on this topic. He re-presented on topic with a small tweak based on review of comments.

    See presentation here:

    index xx peak current test v2025.p

    Presentation summary:

    - Peak Current Sequence Test: Defined as a test designed to simulate reclosing events on an overhead line system,
    - Problem – this test was developed for a different network environment than cable-connected devices.
    - IEEE C37.74 explicitly includes cable charging and not line charging. This is the only test withing IEEE C37.74 that refers to line connected applications.
    - Reviewed faults in overhead line (typically temporary) vs faults in cable systems (typically permanent).
    - Review of other standards (C37.60, C37.62, C37.63, C37.09) – they do not include the peak sequence withstand test.
        - These are typically line connected devices. It could be argued that the making and breaking operations in such device already cover this.
        - If so, then the 3 shots of fault making testing required in C37.74 should suffix too.
    - No standards in IEC require 3 peaks on 3 phases.
    - H. Bannink proposed that the 3x3 test is not relevant. Proposal: Replace the 3x3 test with a peak current test in single peak current test.
        - The proposal aligns with other MV/HV standards, represents real-life conditions better for cable connected devices, removes the need to over-engineer devices.
        - The following motion made by H. Bannink was shown on the screen. F DeCesaro seconded.
            - Remove “sequence” from title/ description.
            - Remove “sets” Remove intervals.
            - Remove ‘c’ from list.
            - Remove “3 peak current surges” from ‘d’ from list.

Discussion:

- A manufacturer noted that this standard is not for overhead devices (Subsurface, vault, pad-mount), but the devices may be used in partially overhead/partially underground connected networks.
- One user stated that they do not use reclosers on purely underground circuits but will use them with a single shot on mixed (UG/OH) circuits. They have heard the same for other utilities, who use two shots.
- The user said they reference C37.74 for pad mounted reclosers (example for interface requirements.) Example of when they transition from UG to OH.
- Suggestion to add a statement for "if used as a recloser/ for recloser applications."
- A manufacturer asked for clarification, "if used for hybrid circuits," does this become a rating?
    - Response – Maybe, would also need to include line charging.
- A manufacturer (1) pointed out that the existing test is 10 cycles and then 11 seconds. If you are really simulating a recloser, it should be 4 shots to lockout and the time would be potentially limited. 11 seconds is an eternity allowing heat dissipation.
    - It was responded that this time is needed for lab generators.
    - Another manufacturer pointed out that this was implemented in the standard in the 70's or 80's when reclosers were slower.
    - It was also pointed out that peak withstand test is to validate electromagnetic (mechanical) integrity and that the short time testing is what is intended for thermal evaluation. was
- A user stated – that for their zone, one delay is 10 seconds.
- A manufacturer (2): We have previously modified this section from 9 peaks to 1 peak per phase, reducing the severity of the test. We are now proposing to eliminate and go to 1 peak in its entirety. We do not control the application of this device. The devices covered by this standard may be large, may have longer conductor paths, may be modular. The connections may be more 'likely' to loosen up during multiple surges. Therefore, it should be left in.
- A manufacturer (3): The argument that the test is not applicable is not valid because these devices are applied on combined UG/OH circuits.
- Test Lab 1 – There is a high probability that the applications described would not result in peaks, but the test requires peaks.

- Test Lab 2 – This is not a stand-alone test; it is part of the sequence of tests.
- A manufacturer – the same test is called out in Table 7 and Table 6 (for ways and entity). This would mean that the entire test for entities would be single peak and short time.
- The motion did not pass:
    - **VOTING:** 2 Agreed; 11 Disagreed; 3 Abstained. (16 members)

Given the first motion did not pass, H. Bannink continued his presentation.

Presentation summary:

- The peak test is supposed to mimic reclosing, but the 3x3 peak withstand sequence is unnecessarily strict compared to C37.60.
    - Reclosers (Open, 0.5s, C-O, 2s, C-O, 2s, C-O) vs CB (Open, 0.3s, C-O, 15s, C-O (or 3min)) vs C37.74.
    - Visual shown on screen of the peak sequence test from C37.74 vs typical recloser sequence to show timing difference.
    - Observations:
        - C37.74 is more demanding (requires every peak to be met)
            - Recloser test – 100% requirement, but only 1 peak required for closing (2 first open).
            - CB test – 1 test at T100 (one close peak)
            - C37.74 mandates equal phase distribution of the peaks.
            - Test's timing intervals do not align with real-world duty cycles.
            - A member who had completed a survey with most of the power labs pointed out that not all labs could control all nine shots to provide the required peaks on the appropriate phases.
            - A test lab (member of STLNA) pointed out that this testing protocol is not an issue for any STLNA member. US labs can control the peak for the 3 shots (same phase).
            - Test lab 2 pointed out the criticality of the 11s in achieving the sequence.
            - It was noted that some international labs will struggle with the test as written.
            - A manufacturer's lab noted they are not currently set up to do this test but did not foresee an issue.

- H. Bannink made a motion:
    - d) The peak current shall be applied such that each phase shall be subjected to at least one peak current surge. At least one surge in a set shall not be less than the rated peak withstand current. (See 5.2.1.5 and Table 3 and Table 4 for preferred ratings.) Other peaks in the set may have currents as low as 90% of the rated value (see Note 1).
        - Note 1: The 90% limit aligns with the T90-T100 test duty for auto-reclosers as specified in IEEE C37.90; 7.103.4.1.
        - This motion was withdrawn by H Bannink and a small group agreed to meet over the break and return with a proposal.

The second session was called to order by the chair at 10:15 AM EST.

- The groups' proposal was reviewed and opened for discussion.
- After significant re-writes, K. Trost made the motion below, which was shown on the screen:
- Karla: I make a motion that we accept language in 7.7.4.3.1 to resolve the technical comment received on 7.7.4.3.1.
- (Note 1 was modified slightly due to the editorial requirements of the IEEE Style Manual, the screen shot below shows the content as it was implemented and voted on)

7.7.4.3.1 Peak withstand current sequence test for switched ways and bus

The DSG shall withstand three sets of peak withstand current surges. Each set shall include three current surges with the switch remaining in the closed position. The purpose is to simulate typical reclosing that may occur in partially overhead and underground circuits. This test is performed as part of the testing described in Table 6 and Table 7. The test may be performed at any three-phase voltage between 50 V and the rated maximum voltage of the switch.

The test shall have the following requirements:

a) The test shall be performed three-phase.
b) Each current surge shall have a duration of not less than 10 cycles.
c) The interval between current surges in each set shall be 11 s or less as mutually agreed to by lab and manufacturer.
d) The interval between the three sets shall not be less than 10 minutes unless the manufacturer agrees to a shorter interval. The DSG may be subjected to no load operations during this interval.
e) The peak current shall be applied so that after three sets have been completed, each phase shall have been subjected to at least one peak current surge no less than the rated peak withstand current. (See 5.2.1.5 for peak current ratings associated with the preferred ratings in Table 3 and Table 4.) The peak current of each of the remaining current surges shall not be less than 90% of the rated peak withstand current.

NOTE— The 90% limit aligns with the tolerance of the T100 test duty for auto-reclosers as specified in 7.103.4.1 of IEC 62271-111:2019/IEEE Std C37.60-2018 [B5].

f) The average rms symmetrical component of the current of the three phases at the tenth cycle for each surge shall not be less than 80% of the rated short-circuit current. The current in any phase shall not vary from the average of the currents in the three phases by more than 10%.

- D Beseda seconded the motion.
- The motion passed:
    - **VOTING:** 14 Agreed; 0 Disagreed; 3 Abstained. (16 members)
- It was noted that the table of tolerance in annex B needed to be updated accordingly.
    - This was done on screen in the meeting.
- Working group vote and approved proceeding to ballot 3 (10-day ballot)
    - A Comment resolution group was formed –
    - Names:
        - Frank DeCesaro
        - Harm Bannink
        - Karla Trost
        - Mohit Chhabra
        - David Beseda
        - Dan Busilan
- The next working group meeting was scheduled for a virtual session on June 25th.

11. **Future Meetings**
    Fall 2025: October 5 – 9, Peppermill Resort, Reno, NV

12. **Adjourn**

    Chair adjourned at 11:19 AM EST.

Name (Printed)	Employer	Sign-in Initials Session 1	Sign-in Initials Session 2
Caryn Riley (Voting-Member)	Georgia Tech/NEETRAC	x	x
David Beseda (Voting-Member)	S&C Electric Co	x	x
Edwin Almeida (Voting-Member)	Southern California Edison	E	E
Eric (Qian) Li (Voting Member)	Powertech Labs	x	x
Francois Soulard (Voting-Member)	Hydro-Quebec	E	E
Frank DeCesaro (Voting-Member)	DeCesaro Consulting Services, LLC	x	x
Harm Bannink (Voting-Member)	G&W Electric	x	x
Harold Hirz (Voting-Member)	Vesco	x	x
Ian Rokser (Voting-Member)	Eaton	x	x
John Kapitula (Voting-Member)	ABB	x	x
Joseph Stemmerich (Voting-Member)	Trayer Engineering Corporation		
Karla Trost (Voting-Member)	G&W Electric	x	x
Kelsey Bush (Voting-Member)	ABB/Elastimold	x	x
Kennedy Darko (Chair)	G&W Electric	x	x
Mohit Chhabra (Voting Member)	S&C Electric	x	x
Paul Found (Voting-Member)	BC Hydro	E	E
Rahul Jain (Voting-Member)	S&C Electric Co	x	x
Travis Johnson (Secretary)	Xcel Energy	x	x
Victor Savulyak (Voting-Member)	Kema Labs	x	x

Colby Lovins (Voting Member)	Federal Pacific, Bristol, VA	x	x
Dan Busilan (Voting Member)	Dominion Energy	x	x
Ganesh Balasubramanian (Voting Member)	Eaton	x	x
Federico Michele (Guest)	CESI		x
Chris Slattery (Guest)	First Energy	x	x
Tim Tillery (Guest)	Howard Industries Laurel, MS		x
Nenad Uzelac (Guest)	G&W Electric Co		x
Doug Edwards (Guest)	Siemens Industries	x	x
Arthur Jur (Guest)	Electro-Mechanical	x	x
Derek Hughes (Guest)	Georgia Transmission Corp	x	
David Dart (Guest)	Noja Power	x	x
Tanner Buel (Guest)	S&C Electric	x	
Dustin Sullivan (Guest)	Hubbell	x	x
Jan Santalli (Guest)	IEEE-SA	x	
Jason Sell (Guest)	Switchgear Power Systems		x