IEEE C37.20.1 Working Group Agenda

IEEE Standard for Metal-Enclosed Low-Voltage (1000 Vac and below, 3200 Vdc and below) Power Circuit Breaker Switchgear

Meeting Date: April 18, 2023
Meeting Time: 2:00 pm – 6:00 pm
Location: Sheraton Sand Key Resort – Clearwater Beach, FL

Attendance

Members:15, Guests:19, quorum met
Attendance is recorded at the end of the meeting minutes

A. Call to Order

Meeting was called to order at 2:00pm on April 18, 2023

B. Introductions

Participants introduced as included below

C. Approval of Agenda and Prior Meeting Minutes

Motion to approve agenda by T. Burse, 2nd by C. Carne. Approved by unanimous consent.
Motion to approve previous meeting minutes by J. Hines, 2nd: T. Burse. Approved by unanimous consent.

D. Rules and Guidelines for conducting Working Group Meetings

Slides and links to documents shared with Working Group
Verbal call for Essential Patents – None Identified

E. IEEE SA Copyright Policy

Link and Slides for SA Copyright Policy shared

F. Working Group P&P's

Link for Working Group P&P's shared

G. PAR Status Report

PAR approved by SA Standards Board 03 Dec 2020 and expires 31 Dec 2024

H. IEEE iMeet Center Workspace

Working Group workspace location and files shared (https://ieee-sa.imeetcentral.com/c37201/home).
Any working group members that require access should contact either the Chair or Secretary.

I. WG Membership

New WG Members: D. Delfino, C. Schneider, New WG Secretary: R. Burns

J. IEEE PES Switchgear Committee Participants – New Committee Management System (CMS)

Registration in new tool requested no later than April 22nd
https://ieee.memberplanet.com/v2app/#/member-registration/join

K. Quorum Check

Quorum confirmed

L. Ad-hoc Reports

a. **Continuous Current Testing Improvements (C37.13/C37.20.1):**
M. Lafond: No meetings held. PC37.13 working on the inclusion of continuous current testing using the methods published in C37.20.2-2022.

b. **Clause 6.2.5/6.2.6 Short-time/Short-circuit:**
T. Burse: Ad-hoc slides shared with group conveying complexity of testing with a circuit breaker. Presentation added to the end of these meeting minutes. Ad-hoc requests additional time to continue work on this subject. Chair approves for continuation of work with guidance to not exceed circuit breaker C37.13/C37.50 parameters if the ad-hoc considers the inclusion of the circuit breaker in 20.1 testing.

c. **Copyright Permission for Cable Lashing:**
M. Lafond: Copyright permission granted from UL for UL891 clause G5 and figure G5.1. Material will be added to next draft for commentary. Presentation added to the end of these meeting minutes. Copyright

material granted from IEEE for C37.20.2 clause 4 d), clause 6.2.2.8, and clause 6.2.9. Material has been added to the draft circulated prior to this meeting.

M. Review Draft Document & Comments

17 draft comments received and reviewed by the WG and results documented in D6 comment tracking sheet.

Comment #1 of D6 comment sheet reviewed by WG as depicted below.

"New clause 5.5.X Temperature limitations for switching and interrupting devices: The temperature rise of the various parts of a circuit breaker shall not exceed the temperature rise limits in IEEE Std C37.13 (AC circuit breakers) or IEEE Std C37.14 (DC circuit breakers). The terminal connection limit of 55C rise in IEEE Std C37.13 or IEEE Std C37.14 is not applicable. The temperature rise of the various parts of a low-voltage definite-purpose switching device shall not exceed the temperature rise limits in IEEE C37.13.1. The terminal connection limit of 55°C rise in IEEE Std C37.13.1 is not applicable."

Motion by D. Hrncir to disapprove the comment in full as written, 2nd: D. Moser, motion passed.

Comment #2 of D6 comment sheet reviewed by WG as depicted below to modify the language of clause 6.2.4.6.

"The switchgear is considered to have passed the test if the temperature and temperature rise limits in Table 3 and Table 4, and the temperature and temperature rise limits in IEEE Std C37.13 or IEEE Std C37.14 or IEEE Std C37.13.1 (as applicable), have not been exceeded in any of the readings over the one-hour period. The terminal connection limit of 55 °C rise in IEEE Std C37.13 or IEEE Std C37.14 or IEEE Std C37.13.1 is not applicable."

Chair called for a vote on the comment. WG consensus was to accept the comment as written.

WG decided to create new ad-hoc to focus on continuous current testing within 20.1 led by M. Lafond and including the following member: C. Carne, C. Schneider, D. Moser, D. Delfino, B. Tatum, D. Hrncir, E. Wilkie, T. Burse, A. Lopez, K. Sippel, and E. Doroz.

WG decided to create a new ad-hoc to focus on scrubbing the current draft for consistent and accurate use of the terms, withdrawable element, drawout-mounted device, and removable element as defined in C37.20.10. Ad-hoc to be led by D. Delfino and consists of E. Hardy and M. Lafond.

N. Adjourn

Meeting adjourned at 5:12pm.

Recorded by:
Robert Burns
Secretary
April 18, 2023

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Attendance:

Role	First Name	Last Name	Company
Chair	Michael	Lafond	ABB
Secretary	Robert	Burns	Eaton
Member	Ted	Burse	Powell Industries, Inc
Member	Clint	Carne	Schneider Electric
Member	Dan	Delfino	ABB
Member	Sahadev	Gohil	AVAIL Switchgear Systems
Member	Jared	Hines	Eaton Corp.
Member	Dan	Hrncir	Eaton
Member	Monique	La Terreur	STACE Electric
Member	Darryl	Moser	ABB
Member	Owen	Parks	ABB
Member	Carl	Schneider	Schneider Electric
Member	Kevin	Sippel	Eaton Electric
Member	Bryan	Tatum	Underwriters Laboratories
Member	William	Wilkie	Eaton
Guest	Emmanuel	Ankrah	KEMA
Guest	Ashok	Ayyaswamy	Voila
Guest	Francis	Beauchemin	Hydro-Quebec
Guest	Anand	Chiravuriah	Black & Veatch
Guest	Randall	Creach	AVAIL Switchgear Systems
Guest	Arkadiusz	Doroz	Eaton
Guest	Brian	Gerzeny	Powell Industries
Guest	Erin	Hardy	Eaton
Guest	Reza	Kheirollahi	Drexel University
Guest	Adrian	Lopez	Powell Industries
Guest	Josh	Lustig	Black & Veatch
Guest	Alexandre	Pelletier	STACE Electric
Guest	Wahaj	Saleem	Siemens Industry, Inc.
Guest	Victor	Savulyak	KEMA
Guest	Dean	Sigmon	Eaton Corporation
Guest	Andrew	Truman	Black & Veatch
Guest	Matt	Westerdale	Bureau of Reclamation
Guest	Zibny	Zheng	Drexel University
IEEE Liaison	Jen	Santulli	IEEE-SA

IEEE PES Switchgear Committee

C37.20.1 WG Meeting

6.2.5 – 6.2.6 Ad Hoc Report

18 April, 2023

Clearwater Florida

Ted Burse

Ad Hoc Members

Ted Burse, Chair
Paul Barnhart
Keith Flowers
Tom Hawkins
Dan Hrncir
Mike Lafond
Adrian Lopez
Victor Savulyak
Kevin Sippel
Bryan Tatum
Danish Zia

Ad Hoc Scope

Develop a recommendation for the WG at or before the Spring meeting for clauses 6.2.5 and 6.2.6.

Background:

WG comments highlight several topic areas within the test clauses of 6.2.5 and 6.2.6 that need investigative work and discussion to determine (1) if any changes were necessary, and (2) what other actions might be required to align to other sub-clauses.

6.2.5 Short-Time Tests

- Allow the use of a circuit breaker if test is performed with a 1 second duration.
  - Currently not allowed
  - Exceeds the requirements of C37.50
- Allow combination with 6.2.6 short-circuit test if current requirements of both 6.2.5 and 6.2.6 are met.

Short-Circuit Test

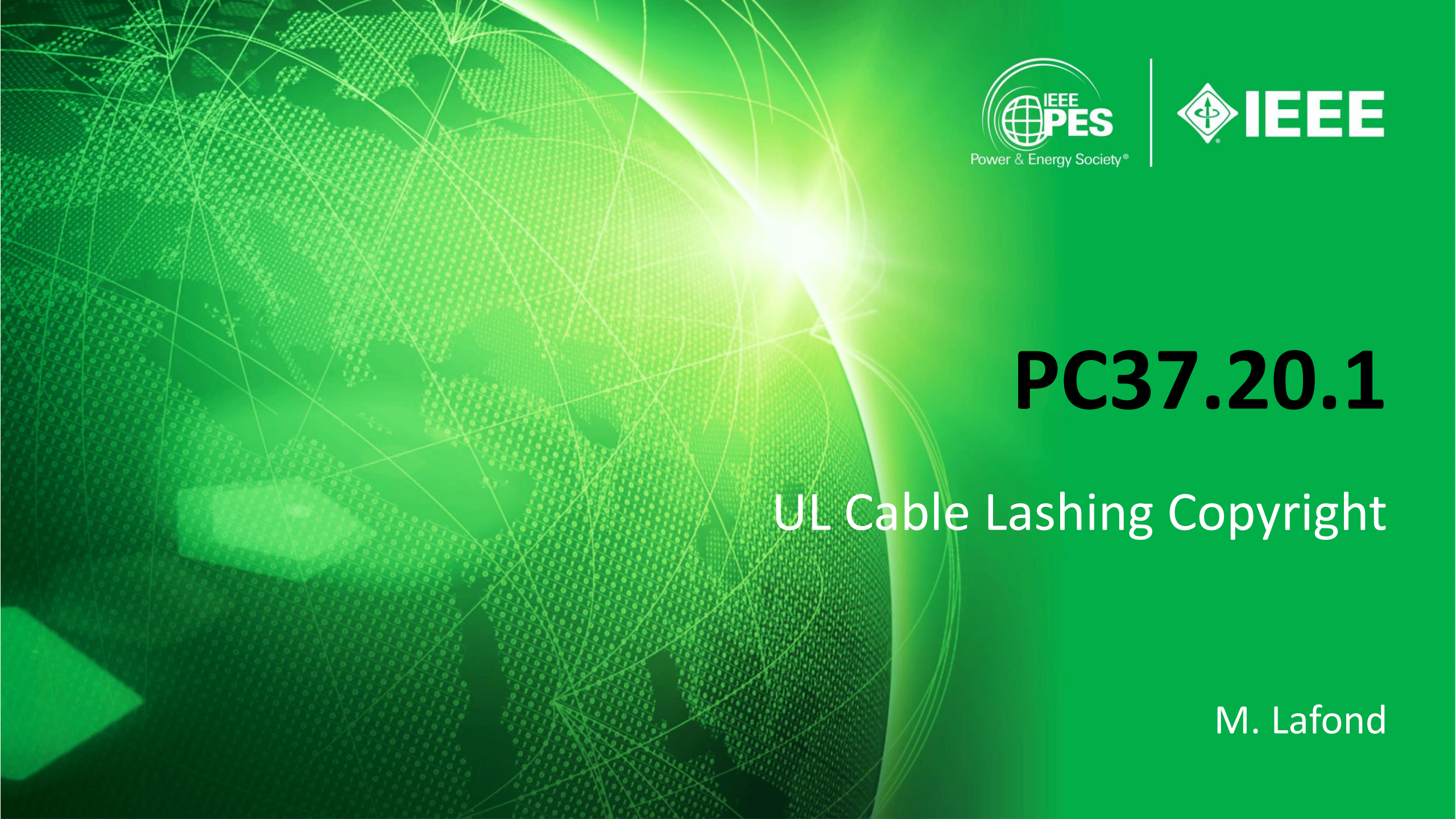
- Allow a circuit breaker to be used for short-circuit tests
  - The use of a circuit breaker for the short-circuit test is currently not allowed. (Compartment “test jumpers” only)
  - Possible contradiction of combining short-time and short circuit tests if a circuit breaker is used.

Discussion Points

- Current use of “test jumper” excludes the stationary and/or movable primary disconnects of the interface between the switchgear assembly and the circuit breaker.

Recomendation

- The Ad Hoc requests a continuation of the work with a completion target prior to the fall 2023 WG meeting.



PC37.20.1

UL Cable Lashing Copyright

M. Lafond

UL Cable Lashing Material

Copyright Permission Granted – April 4, 2022

Standards & Engagement

Safety Science in Action™

March 31, 2023

Kelly Lorne
Sr Dir Finance and Business Operations
IEEE Standards Association
445 Hoes Lane
Piscataway, NJ 08854

Dear Ms. Lorne,

I am authorized to grant permission to IEEE to use the material in connection with the IEEE Project noted below, including consensus ballot and public review of the material, and to modify the material as detailed below in the specified standards project:

Standards Project: PC37.20.1 Standard for Metal-Enclosed Low-Voltage (1000 Vac and below, 3200 Vdc and below) Power Circuit Breaker Switchgear, IEEE PES Switchgear Subcommittee Working Group, Working Group Chair – Michael P. Lafond

Material: UL 891 Standard for Safety Switchboards, published 2019, ULSE Inc., clause G5 Marking and text along with Figure G5.1 Securement of cable.

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Richard Olsen

April 4, 2023

Standards Manager, ULSE Inc.

The following acknowledgment requirements should be met:

☒ Include an acknowledgment in the front matter and use the standard IEEE attribution footnote as shown:

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UL 891 Standard for Safety Switchboards, published 2019, ULSE Inc.
Clause G5 Marking and text
Figure G5.1 Securement of cable

UL Cable Lashing Material

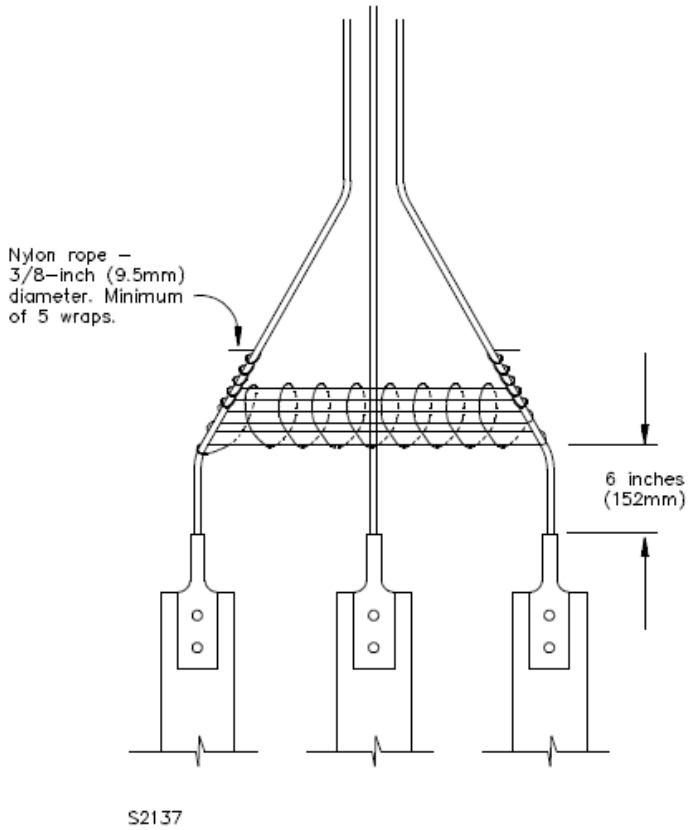
Copyright Material Granted*

G5 Marking

G5.1 The switchboard shall be marked in accordance with 6.3.3.1 with the following or the equivalent: "Wrap line cables together and, if provided, tap cables together with nominal 9.5 mm (3/8 inch) nylon rope or rope having a minimum tensile strength of 8896 N (2000 pounds) at (1) 152 mm (6 inches) and 305 mm (12 inches) from the line terminals with five wraps and (2) every additional 6 inches with five wraps or every 25.4 mm (1 inch) with one wrap." It is also recommended that a drawing as shown in Figure G5.1, or the equivalent, be provided with the switchboard.

Figure G5.1
Securement of cable

(See G5.1)



*UL891 limits this lashing technique to 100kA applications