#### Minutes of Meeting

#### PAR Study Group C37.015 Guide for the Application of Shunt Reactor Switching

**Location:** Catamaran Resort, San Diego, CA – William D. Evans Boat, Level I

**Date:** Tuesday October 10th, 2023 (8:00-9:45 AM PDT)

Participants: 47 Total in Attendance

PAR Study Group Chair: Mike Crawford PAR Study Group Secretary: Luke Collette

#### Call to Order and Introductions

Chair called the meeting to order and attendance recorded.

#### <u>Agenda</u>

Chair presented the agenda.

#### Review of Copyright and Patent Slides & Call for Patents

Patent and copyright policy presented by Chair. No Patent claims identified.

#### **Current Status**

PAR submitted to NesCom for review and approval.

#### Discussion on Proposed Revisions to the Document

The following is a summary of the discussion on proposed revisions to the document once an official WG is formed:

- Study guidance for reactor switching applications will be added to standard potentially as an Annex.
  - Items such as what is required from manufacturers for study input to be included.
- There are some manufacturers that utilize surge arresters across the pole to reduce the effect of reactor switching, as a solution to the reactor switching issues.
  - o Mitigation options currently include the items in Table 1 (page 27).
    - It was asked if manufactures have test results that prove WHY those mediations are necessary, and if they are the correct solution?
    - Proposal to expand on this section of the document for clarity.
- A comment was made regarding the work of the previous Task Force created for shunt reactor switching.
  - The plan is to incorporate work from the previous TF which was disbanded into this WG.
- Delayed current zero situations should be explained.
  - This was included in C37.012, but if it makes sense this could be covered in the revision of this document.

- Proposal to include the chopping currents in the document for vacuum technology.
- Proposal to include surge arrester energy requirements when used as a mitigation solution.
- Wording "52kV" for tertiary reactors, is '52kV' still valid?
  - Tertiary reactors do mostly use vacuum breakers (Mostly medium voltage, less than 38kV).
- Update shunt reactor estimates for capacitance in Annex.
  - o Tables B.1/B.2 etc require review.
  - o Will need to harmonize with C37.011-2019 where appropriate.
- Standard references need reviewed and updated.
- Consider adding a section for monitoring restrikes or reignitions and/or performance monitoring.
- Comment was made that when PAR is approved and iMeet is setup, ask IEEE-SA for copies of the reference documents to be placed on iMeet.

#### Volunteer Request

Chair asked for volunteers to review document before next meeting in Spring 2024 to be prepared for initiation of the work if the PAR is approved.

#### <u>Adjournment</u>

Meeting adjourned by the chair.

#### Reported by

Mike Crawford Luke Collette



## **PAR Study Group**

C37.015

Chair: Mike Crawford; Secretary: Lucas Collette

October 10, 2023





## Agenda

- Call to Order
- Introduction of attendees
- Review of Patent and copyright slides
  - Call for patents
- Current Status
- Proposed revisions to C37.015-2017
- Volunteer Request
- Adjournment

## Patent/Copyright

Power & Energy Society\*



**Patent Slides** 

**Copyright Slides** 







- PAR Submitted
  - Link to PAR





## **Proposed Revisions:**

#### Discussion

- Add guidance for performing studies using digital simulation programs
  - Volunteers?
- Update References and Editorial
- Need for survey of users
  - Simple survey for users useful?
- Other ideas or interests for addition?



## C37.015 Revision

Request for volunteers



# Adjourn

### IEEE PES Switchgear Committee HVCB PAR SG for C37.015 - Roster

Place / Date of meeting:

Catamaran Resort, San Diego, CA / October 10, 2023

Initial to denote attendance	Last name	First name	Company name	Role	Request Membership
X	Balasubramanian	Ganesh	Eaton	Guest	
X	Becker	George	Power Engineers	Guest	
X	Beckel	Andy	Xcel Energy	Member	
X	Behl	Bob	JST Poer Equipment	Guest	
X	Benedict	Dan	PPL	Guest	
X	Benge	Jonathan	Oklahoma Gas & Electric	Guest	
X	Bolar	Sanket	ONCOR	Guest	
X	Bufi	Arben	Meiden America Switchgear	Guest	+
X	Castillo	Pedro	ABB	Guest	+
	Chovanec		Power Grid Components		
X		Andy		Member	
X	Collette	Luke	Duquesne Light Co	Secretary	
X	Collette	Dave	MEPPI	Guest	
X	Crawford	Mike	MEPPI	Chair	
X	Cunningham	Jason	Southern States	Member	
X	Hensberger	Jeremy	MEPPI	Guest	
X	Hermrmosillo	Victor	GE Grid Solutions	Guest	
X	Hirz	Harry	VESCO	Guest	
X	Irwin	Todd	GE Grid Solutions	Guest	
Х	Jarnigan	Chris	Southern Co	Guest	
	Johnson	Dave	Consultant	Member	
Х	Keels	Andy	KEElectric Engineering	Guest	
X	Kim	Sanstae	Hico America	Guest	
	Kurinko	Carl	Hitachi Energy	Member	
Х	Lee	Chang-Hoon	Hyosung	Guest	
X	Lee	Yong Woo	KERI	Guest	
X	Lopez	Leo	WIKA	Member	
X	Ма	Chunming	Burns McDonnell	Guest	_
X	Marshall	Vincent	Southern Co	Member	
X	Masterson	Paul	Meiden America Switchgear	Guest	
X	May	Steven	Southern Co	Guest	-
X	McCord	Neil	KEC Precision	Guest	
X	Meekins		SSLLC	Guest	+
		Gary			
X	Mitchell	David	Southern States	Member	
X	Peterson	Mark	Xcel Energy	Member	
X	Podgorski	Damian	Sargent & Lundy	Guest	
X	Polchinski	Craig	MEPPI	Guest	
X	Rexroad	Aaron	Meiden America Switchgear	Guest	
X	Richter	Frank	S Transmission	Guest	
	Roberts	Brian	Southern States	Member	
X	Rodgers	Jon	Siemens Energy	Member	
X	Schuetz	Carl	ATC	Member	
X	Seo	Jun	HD Hyundai Electric	Guest	
	Sharma	Devki	Retired	Member	
Х	Shiffbauer	Dan	Toshiba	Member	
	Skidmore	Mike	AEP	Member	
Х	Steigerwalt	Don	Duke Energy	Guest	
Х	Tarleton	John	Southern States	Guest	
X	Toups	Vernon	Siemens Energy	Member	1
X	Weeks	Casey	Siemens Energy	Member	1
X	Weisker	Jan	Siemens Energy	Member	+
X	York	Richard	Mitsubishi Electric	Member	
X	Young	Marcus	MEPPI	Member	+
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