

T&I Meeting Minutes

April 3, 2024 – Fort Lauderdale Beach, Florida



Chair: Alex Cochran
Secretary : Caryn Riley
Meeting: Westin Fort Lauderdale Beach Resort, Las Olas III
Time: April 3, 2024 10:15 am - Noon (Eastern Daylight Saving Time)

Meeting Minutes

1. Call to order

The meeting was opened and called to order at 10:18 am EDT.

2. Introductions of Guests

All attendees announced themselves and their affiliation. Sign-up sheet was circulated and attendees were asked to declare their primary subcommittee.

3. Attendance

13 Members, 21 Guests

4. Approval of the agenda

IEEE TI Spring 24 Agenda.pdf

Motion to approve the agenda from M. Christian, seconded by N. Uzelac. The agenda was approved by consensus.

5. Patent Slides

IEEE patent slides were shared with the attendees with no comments from the group.

6. Meeting minutes approval

F23TImiRev0.pdf

No revisions.

Motion to approve the meeting minutes from T. Neighbours , J. Mizener seconded. The meeting minutes were approved by consensus.

7. Chairman's report

a. TI Scope

b. Attendance review

The following attendees will act as liaisons back to the noted subcommittees the actions of this subcommittee today.

LVSD – Jeff Mizener

SA – Albert Livshitz

HVCB – Dan Benedict
HVF – Jeramie Cooper
RODE – Caryn Riley
HVS – Francois Trichon

8. Task forces:

- a. Power Frequency Over-Voltages \geq 200% of Rated Voltage Across an Open Gap (M. Chhabra)
 - Sent out paper for review; only comment received was that the PD test voltage should be increased for certain cases
 - Document is ready for publishing.
 - A. Cochran will talk to TCPC chair about next steps and direct M. Chhabra to publish.
 - No further actions for this task force. Suggestion by N. Uzelac to review other aspects of the influence of inverter based technologies/DER effects on switchgear.
- b. Aging Switchgear: condition assessment and lifecycle management (A. Nenning)
 - Slides provided and will be added to minutes
 - Document is on imeet Central here: <https://iee-SA.imeetcentral.com/wg-ae/>
 - Work completed since Fall 2023 meeting
 - Survey was completed.
 - Paper was re-organized
 - 40 pages for beginning of paper on Survey Results
 - Maintenance Strategies – 1 page
 - Condition Assessment – 34 pages, finalized
 - Aging Process – 71 pages, finalized
 - Appendix – Addition information from Condition Assessment and Aging Process
 - References – 143
 - Next Steps
 - Resolving the final details in the paper
 - Hand to IEEE editor, A. Cochran directed to talk J. Santulli, will plan to recirculate after the IEEE editor is complete
 - A. Cochran will review next steps at ERP and get back to Task Force Chair
- c. T&D switchgear special applications (M. Christian)
 - Appealed for volunteers
 - Topics:
 1. Arc furnace switching,
 2. Gen synch application with HV circuit breakers in the absence of generator circuit breaker
 3. Circuit breakers used in HVDC station on the AC side for filter banks
 4. Power factor testing of CB in the field (this test is not done part of routine production)
 5. Influence of renewables on HV circuit breakers in terms of harmonics, SC rating, X/R ratios, overvoltage
 6. Electronics which is integrated into switchgear such as electronics used for fiber optic current sensors, electronics used with motor operating drives
 7. Impact of HV disconnect switch transients on HV circuit breaker

- Jim Wenzel, Michael Wong, & volunteered to support

9. Open Topics

- a. C. Worthington- Supply Chain and Asset Traceability for Electric (SCATE) program
 - No report, C. Worthington not in attendance.
 - Membership requests an update on SCATE in Fall 2024
- b. Microgrids: request for proposals of switchgear needs for microgrids – what are the gaps, what technology intelligence is needed; Impact of Microgrid Applications on Switchgear Standards
 - J. Mizener unable to move forward. M. Wong volunteered to assist.
 - Will work to submit the proposal intake form to discuss in Fall 2024.
- c. Other new topics
 - TRV parameters from the different subcommittees about why are HVF, RODE and HVCB are different between standards – paper/guide on why they align or are different – S. Cochran
 - How switchgear is influenced by inverter-based technologies
 - What are the technologies being implemented?
 - What is classified as “bad”?
 - What about how these technologies would affect trip and set points?
 - Discussion of what to include in the white paper
 - IEEE 1547 restrictions/application to switchgear things
 - System effects on switchgear devices
 - System committee from IEEE also a resource
 - A. Cochran/N. Uzelac to create a proposal form for Fall 2024
 - 2023 NFPA 70B Standard for Electrical Equipment Maintenance - A. Livshitz
 - Changed from a recommended practice to a standard with this revision
 - New requirements for switchgear
 - NETA Conference papers on the requirements
 - A. Cochran suggested bringing topic to ADSCOM; will discuss in ERP
 - Find out if it should be a T&I Committee proposal
 - Industry Trends – 30 min slot on our agenda to invite guests to report on trends
 - EIA, CEATI, other groups
 - Bring forward new topics for

10. Updates from CIGRE A3, N. Uzelac:

- Six technical brochures will be published this year:
 - A3.39: Application and field experience with Metal Oxide Surge Arresters
 - A3.40: Technical requirements and field experiences with MV DC switching equipment
 - A3.42: Failure analysis of recent AIS instrument transformer incidents
 - A3.43: Tools for lifecycle management of T&D switchgear based on data from condition monitoring systems
 - A3.45: Methods for identification of frequency response characteristic of voltage measurement systems

- A3.48, Part 1: 4th CIGRE Reliability Survey on Transmission and Distribution Equipment
- New work: Calibration of instrument transformers, equipment in harsh environments, digital twin for switchgear, commissioning of new switchgear equipment
- CIGRE Paris in August 2024, will break the record on number of papers, expecting record attendance; 80 papers submitted for A3 committee only; Hotels are full due to the Olympics/Para-olympics – book early
- Webinar on Current Interruption will be repeated for US time zone
- See attached PDF for full Cigre A3 report

11. Future meetings

- Fall 2024, October 13-17, 2024, OMNI Hotel, Oklahoma City, OK

12. Adjourn

Meeting adjourned at 11:36 AM EDT.:

Roster:

Role	First Name	Last Name	Company/Affiliation	Attended
Chair	Alex	Cochran	G&W Electric	X
Member	Dan	Benedict	PPL	X
Member	Mohit	Chhabra	S&C Electric Co.	X
Member	Michael	Christian	ABB	X
Member	Ivan	Contreras	ABB	
Member	Jeramie	Cooper	Eaton	X
Member	Kennedy	Darko	G&W Electric Co	
Member	Anil	Dhawan	Allegis Group	
Member	Brian	Gerzeny	Powell Industries, Inc	X
Member	Albert	Livshitz	Qualus	X
Member	Jeff	Mizener	Siemens Industry, Inc.	X
Member	Stephanie	Montoya	MKI	
Member	Andreas	Nenning	OMICRON electronics GmbH	X
Member	Carl	Schuetz	American Transmission Company (ATC)	
Member	Francois	Trichon	Schneider Electric	X
Member	Nenad	Uzelac	G&W Electric	X
Member	James	Wenzel	Eaton	X
Member	Charles	Worthington	Hubbell Power Systems	
Secretary	Caryn	Riley	Georgia Tech/NEETRAC	X
Guest	Paul	Barnhart	UL Solutions	X
Guest	George	Becker	POWER Engineers Inc.	X
Guest	Jacob	Blake	Hubbell Power Systems	X
Guest	Sterlin	Cochran	Oak & Shield LLC	X
Guest	Tim	Cook	Pascor Atlantic	X
Guest	Lissy	Diaz	Florida Power & Light	X
Guest	Jeffrey	Door	The H-J Family of Companies	X
Guest	Dave	Gohil	AZZ Switchgear Systems	X
Guest	Douglas	Hill	S&C Electric Co.	X
Guest	Tyler	Holp	Eaton	X
Guest	Rahul	Jain	S&C Electric Co.	X
Guest	Sudesh	Juggernauth	Florida Power & Light	X
Guest	John	Kaminski	Siemens	X
Guest	Colby	Lovins	Federal Pacific	X
Guest	Kevin	McGlewn	JST Power	X
Guest	Ken	McKinney	UL Solutions	X
Guest	Jeremy	Moore	Pascor Atlantic	X
Guest	Mollie	Morehead	Pascor Atlantic	X
Guest	Terry	Neighbours	ABB	X
Guest	Sumitabha	Pal	Schneider Electric	X
Guest	Mark	Peterson	Xcel Energy	X
Guest	Daniel	Rivera Morales	Hydro-Québec	X
Guest	Leonel	Santos	Schneider Electric	X
Guest	Aniket	Shirode	ABB	X

Role	First Name	Last Name	Company/Affiliation	Attended
Guest	Bryan	Tatum	UL Solutions	X
Guest	Truett	Thompson	Siemens	X
Guest	Jan	Weisker	Siemens Energy	X
Guest	Mike	Wong	Entergy	X
Guest	Li	Yu	Eaton	X
Guest	Danish	Zia	UL Solutions	X