T&I Meeting Minutes

October 16, 2024 – Oklahoma City, Oklahoma

Chair:	**Alex Cochran**
Secretary :	**Caryn Riley**
Location:	**Omni Oklahoma City Hotel, Oklahoma City, Oklahoma - Room Oklahoma II**
Time:	**October 16, 2024 3:45 PM – 5:30 PM (CDT)**

Meeting Minutes

1. **Call to order**

   The meeting was opened and called to order at 3:46 pm CDT.

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**

   12 Members, 18 Guests

4. **Approval of the agenda**

   IEEE TI Fall 24 Agenda R2.pdf – Attachment 1
   Motion to approve the amended agenda from J. Mizener, seconded by S. Cochran. The agenda was approved by consensus.

5. **IEEE Slides**

   IEEE patent slides were shared with the attendees with no comments from the group. Additional references to the IEEE copyright and codes of conduct were also made by the chair.

6. **Meeting minutes approval**

   S24TImiRev0.pdf
   No revisions.
   Motion to approve the meeting minutes from J. Wenzel, K. McGlown seconded. The meeting minutes were approved by consensus.

7. **Chairman's report**

   a. TI Scope was reviewed.

   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 force reviews:

a. Power Frequency Over-Voltages >= 200% of Rated Voltage Across an Open Gap (A. Cochran)

- Submitted to ERP after Spring 2024 meeting, they approved for it to go on to the Main committee for approval to publish.
- M. Chhabra moved to take to ADSCOM to submit to the Main Committee for approval to publish. Seconded by N. Uzelac.
- Abstain:3, Deny: 0, Approve: 9, Motion passes.

b. Aging Switchgear: condition assessment and lifecycle management (A. Cochran)

- Document is on imeet Central here: https://ieee-sa.imeetcentral.com/wg-ae/
  - Or within the T&I imeet Central Site within Files & Discussions in the Drafts -> Mature Drafts folders
- Window is open for 6 weeks to review by T&I group and Main Committee officers
- Once comments are resolved, we can move to Main Committee for permission to publish.

c. T&D switchgear special applications (A. Cochran)

- Appealed for volunteers, had a conflict with this meeting
- 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

- No new volunteers for the work.

9. Open Topics

a. 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 discussed the potential project.
  - US Department of Energy Definition of Microgrid: A microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid.
- M. Chhabra and N. Uzelac to chat with J. Mizener to see if a proposal for work can be submitted as they expressed interest.

- Request/Description from J. Mizener requesting participants:
    - The TF on Microgrids is searching for direction. Prior to this meeting, attempts to engage potentially interested parties had not been successful. It is hoped that the tide will turn shortly.

      The first order of business is to find a name more descriptive of the goals of the TF. Something along the lines of "Special Requirements for Switchgear used in Microgrids". The requirements would relate to topics such as (but certainly not limited to) Switching transients, Synchronization, Transformer grounding and so on.

      I invite any and all interested parties to get involved and provide input on this subject.

      Please send an email to jeff.mizener@ieee.org and I will set up a brainstorming session. Participation in that session will not obligate you to anything but participants and contributors will be welcomed.

b. SCATE – Bar Coding – C. Worthington

- C. Worthington did not attend.
- K. Trost made a presentation in the RODE Subcommittee meeting on October 17, 2024. See the Fall 2024 minutes of that meeting for complete details. The main points of that presentation are presented below.
    - The Supply Chain and Asset Traceability for Electric Grid (SCATE) committee completed their activity in early 2024 and issued a white paper.
    - In May 2024, a PAR was approved for creation of a new standard, *P3476 Standard for Unique IDs and Smart Tags for Supply Chain and Asset Traceability for the Electric Grid* . This work is under the PES Transmission & Distribution Subcommittee with Alicia Farag as chair.
    - This is a fast moving working group that needs input from members of the Switchgear subcommittees.

c. 2023 NFPA 70B Standard for Electrical Equipment Maintenance - A. Livshitz

- ADSCOM believes T&I Subcommittee is correct group to move this forward.
- A. Cochran presented and edited the proposal intake form {See Attachment 3.}
- Volunteers: A. Livshitz, K. McGlown, O. Hartmann, J. Cooper for the task force
- Motion to start the task force K. McGlown, Seconded by A. Livshitz, Approved by consensus.

d. TRV parameters from the different subcommittees

- Interest in creating a high level document about why are HVF, RODE and HVCB are different between standards – paper/guide on why they align or are different
- D. Sullivan also proposed doing additional studies to measure TRV values for current grid installations and transformer designs
- Comments from S. Cochran, N. Uzelac, A. Livshitz, and D. Sullivan
- Looking for volunteers to write the proposal intake form to define the scope
    - S. Cochran, J. Cooper and D. Sullivan volunteered
    - Liaisons will contact HVCB and RODE subcommittees for additional volunteers

e. How switchgear is influenced by inverter-based technologies

- Super harmonics – aging effects and losses
- How to handle what it does to protection
- Example: PTs are failing and it looks like it may be a harmonics effect
- May be a good idea to merge with the Microgrids proposal
- Look at any research papers on the effects on batteries or PV DER
- Contact N. Uzelac to develop a proposal intake form

f. Other new topics

- From the Panel session, A. Nenning asked is there a need to create a standard for what data records look like?
    - N. Uzelac is concerned that this touches many committees outside of Switchgear
    - A. Livshitz mentioned that there is a good starting point already in IEC 61850
    - N. Uzelac volunteered to write letter between IEEE PES TC and Cigre TC to determine interest

10. Updates from CIGRE A3, N. Uzelac:

- Cigre meeting in Paris
    - Over 1,000 papers, almost 5,000 registered delegates
    - Considerable amount of overlap between different groups/interconnections between areas
    - US uses Resiliency/Europe uses Sustainability/Reduced carbon footprint
    - Replacement of SF6 in Switchgear
        - Alternative gases being used mainly for HV
        - Vacuum-operated and NOG for MV switchgear

11. Future meetings

- Spring 2025: April 6 – 11, Wyndham Grand Orlando Resort Bonnet Creek, Orlando, FL
- Fall 2025: October 5 – 9, Peppermill Resort, Reno, NV
  Note: Training track on Wednesday, Main Committee on Thursday afternoon - plan travel accordingly!
- Spring 2026: April 26 – 30, Sheraton Sand Key Resort, Clearwater Beach, FL
- Fall 2026: October 4 – 8, Catamaran Resort, San Diego, CA
- Spring 2027: April 3 - 8, Hyatt Regency, Orlando, FL
- Fall 2027: October 10 – 14, Alohilani Resort, Waikiki Beach, HI
- Spring 2028: April 23 - 27, Marriott Rivercenter, San Antonio, TX
- Fall 2028: October 8-12, Hyatt Regency, Columbus, OH

12. Adjourn

Meeting adjourned at 5:14 pm CDT.

Roster:

Role	First Name	Last Name	Company/Affiliation	Attended
Chair	Alex	Cochran	Sparkstone Electrical Group	X
Secretary	Caryn	Riley	Georgia Tech/NEETRAC	X
Member	Dan	Benedict	PPL	X
Member	Mohit	Chhabra	S&C Electric Co.	X
Member	Michael	Christian	ABB	
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	
Member	Francois	Trichon	Schneider Electric	X
Member	Nenad	Uzelac	G&W Electric	X
Member	James	Wenzel	Eaton	X
Member	Charles	Worthington	Hubbell Power Systems	
Guest	Mauricio	Aristizabal	Hitachi Energy Sweden	X
Guest	Koustubh	Ashtekar	Siemens Industry, Inc.	X
Guest	Jared	Cantu	Omicron	X
Guest	Sterlin	Cochran	G&W Electric	X
Guest	Oliver	Hartmann	Siemens Industry, Inc.	X
Guest	Eduardo	Henriet	Siemens Energy	X
Guest	Tyler	Holp	Eaton	X
Guest	Umer	Khan	ABB	X
Guest	Colby	Lovins	Federal Pacific	X
Guest	Peter	Mapp	Emspec	X
Guest	Kevin	McGlown	JST Power	X
Guest	Mark	Peterson	Xcel Energy	X
Guest	Amy	Rowell	Schneider Electric	X
Guest	Jason	Sell	Switchgear Power Systems	X
Guest	Aniket	Shirode	ABB	X
Guest	Dustin	Sullivan	Hubbell Power Systems	X
Guest	Bryan	Tatum	UL Solutions	X
Guest	Danish	Zia	UL LLC	X

Note: The HVCB subcommittee members designated by the HVCB chair were not updated by the T&I chair prior to the meeting so this list includes what was used to determine quorum. Moving forward the designated HVCB subcommittee members for the T&I subcommittee are Dan Benedict, Kirk Smith and Steven May.