

Capacitor Subcommittee
IEEE PES Transmission and Distribution Committee
2021 IEEE PES General Meeting
Remotely done (Virtual Meeting)

Wednesday, July 28, 2021

1. General meeting introductions and acknowledgments

The meeting was called to order by the Subcommittee Chairman Vincent Deslauriers.

Attendees introduced themselves. The following 17 people were in attendance:

<u>Name</u>	<u>Company</u>	<u>Member or Guest</u>
Vincent Deslauriers	Hitachi ABB Power Grids	Chairman
Xuan Wu	American Electric Power	Vice Chairman
Richard Sévigny	Hydro-Québec	Member
Elyse Pham	Southern California Edison	Member
Clay Fellers	Eaton's Cooper Power Systems	Member
William Munn	Southern Company	Member
Glenn Pietschmann	Hubbell Power Systems	Member
Pratap Mysore	Pratap Consulting Services	Guest
Joshua Watson	Burns & McDonnell	Guest
Mark McVey	Dominion Energy	Member
Jeff Nelson	Tennessee Valley Authority	Member
Roy Alexander	RWA Engineering LLC	Member
Stephen Ladd	Duke Energy	Member
Hua Liu	Southern California Edison	Member
Jan Paramalingam	POWER Engineers	Member
Othmane Alaoui	Hitachi ABB Power Grids	Member
Bruno De Freitas	Siemens Energy	Member
Timothy Lenberg	Bonneville Power Administration	Member

* New Member or Guest, Welcome!

2. Approval of minutes of previous meeting

The meeting minutes for the subcommittee JTCM meeting (held on Jan. 13, 2021) were approved with a motion from Xuan Wu and a second from Richard Sévigny.

3. Membership review

The membership roster will be updated based on people present to the virtual meeting. This subcommittee is open to new members and guests.

Membership roster can be found at: <http://grouper.ieee.org/groups/td/cap/>

4. Chairman's report

- The next JTCM meeting is currently scheduled to be held in person in California.
- The potential panel sessions for PES General Meeting in 2022 will be to be determined as new business items.
- There is a need of a new Chairman for the working group on standards for series capacitors (IEEE Std. 824 and IEEE Std. 1726).
- The subcommittee website may be moved to a new template (Wordpress). The Chairman is asking for volunteers who will be interested in managing the new website since Tom Grebe will only be interested in maintaining the existing website.

5. Liaison reports:

- **NEMA – Clay Fellers**

NEMA met and discussed the proposed Annex C & D of the Fuseless failsafe test in IEEE-18. In addition, NEMA team will meet to discuss the pancake/flat mounted capacitor rack design details.

NEMA CP8 is spending money of 3 projects with the help of consultants:

Project #1 - Scope and High-Level Outline of a DC Capacitor Standard

Project #2 - Scope and High-Level Outline of a Low-Voltage Capacitor Standard

Project #3 – White Paper on how to use of IEEE 18 and IEEE 1036 in Purchasing Specs

The white paper will be posted in NEMA's website and probably accessible by the public with no charge. Comments to this white paper are welcomed.

- **IEC – Richard Sevigny**

- Richard is the chair for WG MT-19, which covers IEC Standards 60871-1:3.
- Richard mentioned that there are some voting undergoing now on the documents related to series capacitors (143-2 and 143-3), which are almost completed.
- Richard mentioned there is an ongoing effort regarding low voltage power factor correction capacitor bank.

- **CIGRÉ –Mark McVey**

Mark McVey mentioned that the CIGRÉ W.G. C4/B5.41 has just published a technical report (TB-829) on Overcompensation of Transmission Line with Series Capacitor Banks. This report includes a lot of good information for protections and applications of significantly overcompensated (100-150%) lines, which goes through a list of study requirements, case studies and samples for those applications. Mark also mentioned that in Europe some utilities want to tap into an existing series compensated lines from wind farms. WG C4 also deals with new technologies such as new insulating materials.

6. Working group reports:

- **W.G. on Capacitor Technical Papers – Tom Grebe (by Vincent Deslauriers)**

Nothing to report.

Jeff mentioned that some papers related to capacitors were sent to the Substations Committee for a review without being passed to our subcommittee.

- **W.G. on Capacitor Bibliography – Richard Sevigny**

Nothing to report.

- **Shunt Capacitor Working Group – Xuan Wu**

The working group virtually met on July 27 to discuss the latest draft of IEEE Std. 18. There will be another working group meeting scheduled during late October of 2021 for the following open action items identified from this meeting:

- Research the BIL requirements for both the capacitor bushing and internal insulations.
- Research the statistical relationship between 3 consecutive impulses (all need to be passed) and 15 impulses (allowing at most 2 failures). Jeff and Richard mentioned that they have found some relevant documents.
- Research the dimension requirements for the new “pancake” capacitor rack design especially for the spacing between bushings of the capacitor units connected to different strings.
- Further clarify Annex C & D.

- **W.G. on Low Voltage Shunt Capacitor Application – Othmane Alaoui**

The working group virtually met on July 28 and started to assign tasks to its members. They also discussed potential panel session subjects for 2023.

- **W.G. on Standard for Series Capacitors – Mark McVey**

All negatives from the initial ballot of IEEE Std. 824 have been resolved. Mark expected to have the document recirculated for another ballot soon.

- **W.G. on the Application Guide for Shunt Capacitors (Std 1036) – William Munn**

William will create a PAR before Jan. 2022 for IEEE Std. 1036 to kick off a new revision cycle. There have already been discussions going on for future revisions.

- **T.F. on Capacitor GMD Mitigation – Mark McVey**

No meeting was held during this PES General Meeting.

NEMA promoted a meeting about a month ago, in which NEMA was requested from FERC to develop some standards/guides for GMD and EMP. This T.F. will be willing to support NEMA for GMD related topics.

- **T.F. on Capacitor Discharge Limitation Application – Roy Alexander**

Roy presented his latest testing results and thoughts for capacitor discharge limitation. Roy mentioned that he will prepare a draft of a technical report (about 10 pages), which hopefully will be approved by the end of August.

- **Guide for Application & Specification of Harmonic Filter – Jan Paramalingam**

Jan mentioned that the working group starts to make a new revision of IEEE Std. 1531. The working group will research incorporations of IEEE Std. 1547 and IEC Std. 622001, harmonization of chapters 5 and 6, and moving some clauses into separate annexes where the detailed calculations and studies are located. There is no plan to create a new PAR right now until perhaps 2025.

7. Old business:

- COVID-19

8. New business:

- Vincent is seeking for a new chairman for IEEE Std. 1726.

- Vincent will resubmit the panel session subjects officially to T&D Committee by Oct. 27th.

9. Future meetings:

- January 9 – 12, 2022 – Hyatt Regency Orange County, Garden Grove, CA

Meeting is adjourned at 4:46 PM.

Minutes prepared by Xuan Wu.