

CHAIR
Patrick Fitzgerald
High Voltage SF6 Consultants
39 Acorn Dr.
Uxbridge, MA 01569
Phone: 774-813-5144

VICE CHAIR
Joe Warner
ABB
901 Main Campus Drive
Raleigh, NC, 27606
Phone: 919-856-2476

SECRETARY/TREASURER
Matt Bauer
Burns & McDonnell
9400 Ward Parkway
Kansas City, MO 64114
Phone: 816-349-6837

**D2 Working Group – IEEE 525 Cable Systems in Substations
2021 JCT Meeting – Virtual
Monday January 12, 2021 9:30 am – 11:30 am EST**

CHAIR

Xuan Wu
AEP
xwu@aep.com

VICE CHAIR

Prudhvi Bhattiprolu
AEP
pbhattiprolu@aep.com

SECRETARY

Martine-Denise Long
Buckeye Rural Electric
Cooperative
[us.martine-
denise.long@ieee.org](mailto:us.martine-denise.long@ieee.org)

TECHNICAL EDITOR

Vacant

Attendees:

1. Xuan Wu (AEP) (Chair – New)
2. Bhattiprolu, Prudhvi Anand (AEP) (Vice Chair - New)
3. Martine-Denise Long (Secretary)
4. DJ Moreau (Member)
5. Shashikant Patel (Member)
6. Arthur Graves (Member)
7. Barac, Radoslav (Guest)
8. Barthoover, Dane (Guest)
9. Dietzman, W. Bruce (Guest)
10. Campbell, Jim (Member)
11. Garg, Shubhanker (Guest)
12. Khan, Kamran (Guest)
13. Khomarlou, Del (Guest)
14. Krugar, Paul (Guest)
15. Ma, Chunming (Guest)
16. Majdi, Emily (Guest)
17. Maldonado, Art (Guest)
18. Maniego, Reginaldo (Guest)
19. Murphy, Brendan (Guest)
20. Murray, Neal (Guest)
21. Parsi, Sean (Guest)
22. Salinas, Jorge (Oncor) (Guest)

Order of operations/discussion:

1. The patent slides were presented along with a call for acknowledgement of any potentially essential patents and duty to inform. No responses were received.
2. Copyright policy: <https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/ieee-sa-copyright-policy-2019.pdf>
3. Everyone introduced themselves.
4. 7 of the 10 members were present, quorum achieved.
5. Xuan reviewed the meeting notes from the 11/13/2020 meeting. Minutes were approved after minor revisions with no objections, no one abstained.
6. Xuan went over IEEE 1143. Noting it only covers low voltage cable. Xuan briefly reviewed the interest in sections 4 & 6 on cable shielding and grounding methods. Table 4 - **Shield options advantages and disadvantages** was highlighted for its analysis of different types of cable

CHAIR
Patrick Fitzgerald
High Voltage SF6 Consultants
39 Acorn Dr.
Uxbridge, MA 01569
Phone: 774-813-5144

VICE CHAIR
Joe Warner
ABB
901 Main Campus Drive
Raleigh, NC, 27606
Phone: 919-856-2476

SECRETARY/TREASURER
Matt Bauer
Burns & McDonnell
9400 Ward Parkway
Kansas City, MO 64114
Phone: 816-349-6837

**D2 Working Group – IEEE 525 Cable Systems in Substations
2021 JCT Meeting – Virtual
Monday January 12, 2021 9:30 am – 11:30 am EST**

CHAIR
Xuan Wu
AEP
xwu@aep.com

VICE CHAIR
Prudhvi Bhattiprolu
AEP
pbhattiprolu@aep.com

SECRETARY
Martine-Denise Long
Buckeye Rural Electric
Cooperative
[us.martine-
denise.long@ieee.org](mailto:us.martine-denise.long@ieee.org)

TECHNICAL EDITOR
Vacant

designs. Also, Table 14 was highlighted. Xuan suggested to merge the review work of this standard into the EMP Taskforce.

- a. Chunming Ma mentioned the sub-group met in June 2020 and concluded to use IEEE 1143 as a reference into IEEE 525 where it is applicable.
 - b. An EMP Mitigation Taskforce will be established after some discussion
 - c. **Action: (Xuan)** Review and possibly setup taskforce
7. An excel spreadsheet with PSCCC-F0 Fiber Optics subcommittee & PSCCC-E0 Wireline Subcommittee comments were reviewed briefly. The status of about 20 remaining comments need to be addressed.
- a. Delavar highlighted row 26 in the spreadsheet, about grounding both ends, would need to be addressed. The group discussed whether the metallic armored fiber optic cable with one-end grounded could be a safety concern for personnel. On the other hand, the group discussed the potential negative impacts if both-ends are grounded, including circulating fault current on the metallic armor under a fault condition. Further discussions are needed within this taskforce.
 - b. **Action: Taskforce (Xuan, Shubhanker Garg, Jorge Salinas, Jim Campbell, Martine Long)** Meet to complete review of the comments and respond.
8. IEEE 1242 and 1580 – Taskforce, including Jorge, Ross, Chunming, Art, Xuan, Prudhvi met on 01/07/21 discussing about developing an appendix including a table guiding utility engineers to select various control cable designs or types based on different substation conditions & applications.
- a. The taskforce plans to develop a need list from the utility point-of-view for specific environments and conditions and then address those needs in an appendix using a table format.
 - b. The plan is to still reference IEEE 1242 in the guide.

CHAIR
Patrick Fitzgerald
High Voltage SF6 Consultants
39 Acorn Dr.
Uxbridge, MA 01569
Phone: 774-813-5144

VICE CHAIR
Joe Warner
ABB
901 Main Campus Drive
Raleigh, NC, 27606
Phone: 919-856-2476

SECRETARY/TREASURER
Matt Bauer
Burns & McDonnell
9400 Ward Parkway
Kansas City, MO 64114
Phone: 816-349-6837

**D2 Working Group – IEEE 525 Cable Systems in Substations
2021 JCT Meeting – Virtual
Monday January 12, 2021 9:30 am – 11:30 am EST**

CHAIR
Xuan Wu
AEP
xwu@aep.com

VICE CHAIR
Prudhvi Bhattiprolu
AEP
pbhattiprolu@aep.com

SECRETARY
Martine-Denise Long
Buckeye Rural Electric
Cooperative
[us.martine-
denise.long@ieee.org](mailto:us.martine-denise.long@ieee.org)

TECHNICAL EDITOR
Vacant

- c. Art gave a presentation introducing the IEEE 1242 as a comprehensive standard for petroleum and chemical plants covering low and medium voltage cables. He highlighted the Type P cable in its various applications.
 - i. As a non-standard cable, its ampacity is covered in the NEC 337, 2020.
- 9. Jim discussed his utility effort to build EMP hardened substations and mitigation efforts. High-altitude electromagnetic pulse (HEMP) would cause a lot of widespread damages. Shielded cables are required on 115kV and above substations per Southern Company. However, cable shielding is not adequate for EMP protections on control buildings. Other areas to be focused include control building materials, doors, and other sealing methods to reduce EMP penetration into a building.
 - a. **Action: (Jim Campbell)** Continue to keep D2 informed of government/EPRI discussions on EMP hardening requirements.

Meeting Adjourned at 11:32am EST

Our website is: <http://sites.ieee.org/sagroups-525/>