

**C57.143 – IEEE Guide for Transformer Monitoring**  
**Monday, April 26, 2021**  
**Virtual Meeting**  
**Minutes of WG Meeting**

The meeting was called to order at 2:20 PM by Chair Mike Spurlock. Vice-Chair Poorvi Patel and Secretary Elizabeth Bray (writer of Minutes) were also present.

There were 47 of 120 members present. There were 43 guests, and 21 guests requesting membership. A membership quorum was achieved. The attendance for this meeting was as follows:

- Number of Members in Activity = 88
- Number of Members Present = 47
- Percentage of Members Present = 53.4%
- Number of attendees = 120
- Attendees requesting Membership = 21

List of Meeting Attendees is provided below.

First Name	Last Name	Company	Role
Thomas	Prevost	Weidmann Electrical Technology	Member
James	Gardner	SPX Transformer Solutions, Inc.	Member
William	Boettger	Boettger Transformer Consulting LLC	Member
Juan	Castellanos	Prolec GE	Guest
Mahesh	Sampat	EMS Consulting Inc.	Guest
Stephen	Jordan	Tennessee Valley Authority	Member
Emilio	Morales-Cruz	Qualitrol Company LLC	Member
John	Lackey	PowerNex Associates Inc.	Guest
Paul	Jarman	University of Manchester	Member
John	Harley	FirstPower Group LLC	Member
John	Crouse	Roswell Alliance	Member
Michael	Franchek	Retired	Guest
Axel	Kraemer	Maschinenfabrik Reinhausen	Member
Peter	Zhao	Hydro One	Member
Krzysztof	Kulasek	Hitachi ABB Power Grids	Member
Oleg	Roizman	IntellPower Pty Ltd	Member
Kumar	Mani	Duke Energy	Member
Paul	Boman	Hartford Steam Boiler	Member
Rogério	Verdolin	Verdolin Solutions Inc.	Member
Gary	Hoffman	Advanced Power Technologies	Member
Charles	Sweetser	OMICRON electronics Corp USA	Member
Scott	Reed	MVA	Member
James	Cross	Kinectrics	Member
Douglas	Craig	Richards Manufacturing Co.	Guest
Jean-Noel	Berube	Rugged Monitoring Inc.	Member
Luiz	Cheim	Hitachi ABB Power Grids	Member

John	Chisholm	IFD Corporation	Guest
Roger	Hayes	General Electric	Member
Mike	Spurlock	Spurlock Engineering Services, LLC	Chair
James	McBride	JMX Services, Inc.	Member
Brian	Sparling	Dynamic Ratings, Inc.	Member
George	Frimpong	Hitachi ABB Power Grids	Member
James	Dukarm	Delta-X Research Inc.	Member
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Donald	Lamontagne	Arizona Public Service Co.	Member
Markus	Stank	Maschinenfabrik Reinhausen	Member
Patrick	Picher	Hydro-Quebec IREQ	Member
Marco	Espindola	Hitachi ABB Power Grids	Member
Claude	Beauchemin	TJH2b Analytical Services	Member
John	Pruente	SPX Transformer Solutions, Inc.	Member
Mark	Tostrud	Dynamic Ratings, Inc.	Member
Poorvi	Patel	Electric Power Research Institute (EPRI)	Vice-Chair
David	Sheehan	HICO America	Member
Ryan	Thompson	Burns & McDonnell	Member
Mark	Faulkner	EATON Corporation	Guest
Xose	Lopez-Fernandez	Universidade de Vigo	Member
Anthony	McGrail	Doble Engineering Co.	Member
Stephanie	Denzer	Alliant Energy	Member
Sukhdev	Walia	New Energy Power Co.	Member
Stephan	Brauer	Morgan Schaffer	Member
Robert	Kinner	FirstPower Group LLC	Member
Anil	Sawant	Virginia Transformer Corp.	Member
Detlev	Gross	Power Diagnostix	Member
Leon	White	H2scan	Guest
Larry	Rebman	EMLS, Inc.	Guest
Elizabeth	Bray	Southern Company Services	Secretary
Christopher	Steineman	Delta Star Inc.	Member
Patrick	Rock	American Transmission Co.	Guest
Robert	Mayer	Siemens Energy	Member
Thomas	Hartmann	Pepco Holdings Inc.	Member
Kristopher	Neild	Megger	Member
Jonathan	Reimer	FortisBC	Guest
Lorne	Gara	Shermco	Member
Ismail	Guner	Hydro-Quebec	Member
Jeffrey	Wright	Duquesne Light Co.	Member
Michael	Frayne	Hammond Power Solutions	Guest
Hakim	Dulac	Qualitrol Company LLC	Member
Paul	Su	FM Global	Member

Attila	Gyore	M&I Materials Ltd	Member
Niklas	Gustavsson	Hitachi ABB Power Grids	Member
Jinesh	Malde	M&I Materials Inc.	Guest
Trenton	Williams	Advanced Power Technologies	Member
Jeremiah	Bradshaw	Bureau of Reclamation	Member
William	Whitehead	Siemens Energy	Member
Anastasia	O'Malley	Consolidated Edison Co. of NY	Member
Florin	Faur	SPX Transformer Solutions, Inc.	Member
Alan	Sbravati	Cargill, Inc.	Guest
Mickel	Saad	Hitachi ABB Power Grids	Member
Travis	Spoone	EATON Corporation	Member
Martin	Munoz Molina	Orto de Mexico	Member
Akash	Joshi	Black & Veatch	Guest
Igor	Simonov	Toronto Hydro	Guest
Malia	Zaman	IEEE	Member
Roger	Fenton	Fenton Solutions	Member
Stuart	Chambers	Powertech Labs Inc.	Member
Stacey	Kessler	Basin Electric Power Cooperative	Member
Janusz	Szczechowski	Maschinenfabrik Reinhausen	Member
Nitesh	Patel	Hyundai Power Transformers USA	Member
Drew	Welton	Intellirent	Member
Caroline	Peterson	Xcel Energy	Member
Lee	Doyle	Vaisala	Member
Gilles	Bargone	FISO Technologies Inc.	Member
John	Reagan	Oncor Electric Delivery	Member
Matthew	Webb	SPX Transformer Solutions, Inc.	Member
Kyle	Heiden	EATON Corporation	Member
David	Calitz	Siemens Energy	Member
Darrell	Mangubat	Siemens Power Operations Inc.	Member
Suleman	Khan	Ontario Power Generation	Guest
Jon	Karas	SDMyers, LLC.	Member
Hugh	Waldrop	Memphis Light, Gas & Water	Guest
Mana	Yazdani	Trench Limited	Member
Dmitriy	Klempner	Southern California Edison	Member
Kyle	Stechschulte	American Electric Power	Member
Jonathan	Sinclair	PPL Electric Utilities	Member
Saramma	Hoffman	PPL Electric Utilities	Member
Matthew	McFadden	Oncor Electric Delivery	Guest
Zachary	Draper	Delta-X Research Inc.	Guest
Stefan	Schindler	Maschinenfabrik Reinhausen	Guest
William	Knapek	OMICRON electronics Corp USA	Guest
Adrian	Silgardo	IFD Corporation	Member
Risto	Trifunski	Trench Limited	Guest

Tejasvi	Prakash	Schweitzer Engineering Labs	Member
Zlatan	Fazlic	Camlin Power	Member
Anatoliy	Mudryk	Camlin Power	Member
Evgenii	Ermakov	Hitachi ABB Power Grids	Guest
Adam	Smith	Commonwealth Associates, Inc.	Member
Derek	Hollrah	Burns & McDonnell	Member
Balakrishnan	Mani	Virginia Transformer Corp.	Member
Mauricio	Soto	Hitachi ABB Power Grids	Member
Nabi	Almeida	Prolec GE USA LLC	Member
Suresh	Babanna	SPX Transformer Solutions, Inc.	Member
David	Holland	ExxonMobil	Guest
Taylor	Gray	Portland General Electric (PGE)	Guest
Michael	Richardson	Ameren	Guest
Kannan	Veeran	Georgia Transformer	Guest
ANDY	DOWNEY	SPX TRANSFORMER SOLUTIONS	Guest
Markus	Soeller	Power Diagnostix	Guest
George	Jalhoum	PPI	Guest
Bobby	Clift	Xcel Energy	Guest

The WG plans to meet at the Fall October 17 2021 Transformers Committee Meeting in Milwaukee, Wisconsin.

#### **Agenda**

1. Welcome & Introduction
2. Call for Patent Disclosure
3. Chair Remarks
4. Recognition and thanks to volunteers
5. Welcome New Members
6. Quorum Check
7. Approval of Agenda
8. Recent Email Ballot Approvals (F2019 and F2020) minutes
9. Task Force Activities:
  - a. Task Force 1 (Chapters 1,2,3,4) – Trent Williams
  - b. Task Force 2 (5.2 Thermal, 5.3 Cooling, 5.4 Loading) – Poorvi Patel
  - c. Task Force 3 (5.5 LTC, 5.6 Tank, 5.7 Conservator, 5.11 Partial Discharge) – Emilo Morales
  - d. Task Force 4 (5.8 DGA, 5.9 Moisture, 5.10 Bushings, 5.12 GIC) – Bill Whitehead
  - e. Task Force 5 (Chapter 6 Communications) – Zlatan Fazlic
  - f. Task Force 6 (Chapter Cost Benefits) – Elizabeth Bray
10. Status of PAR Extension Request
11. Discuss Possible New Chapter to be inserted between Chapters 4 and 5
12. New Business

Chair Mike Spurlock asked if a call for patents disclosure was made and no patent claims were reported. A letter of assurance was received last week from one claimant that had notified the working group of an essential patent claim during the Fall 2020 virtual meeting.

Chair Mike Spurlock reviewed the IEEE Copyright policy.

Chair Mike Spurlock provided chair remarks with accomplishments of 2020 and the March 10, 2021 email ballot approval. The volunteers were also recognized and thanked for their work in supporting this working group. As well as the call for additional volunteers and how to get added to support the areas that need volunteers. Nine new members were welcomed to the working group.

A motion to approve the Spring 2021 Agenda was made by Trent Williams and seconded by Emilio Morales-Cruz. The working group unanimously approved the agenda.

The Fall 2019 and Fall 2020 meeting minutes and agendas were approved by the working group by e-mail ballot on March 10, 2021. On that date, there were 83 members in the Working Group and we needed 42 votes to pass each measure.

**Columbus (Fall 2019) Meeting Agenda.**

Approved as written: 45  
Approved with comments: 0  
Disapproved: 0  
Abstain: 1

**Columbus (Fall 2019) Meeting Minutes.**

Approved as written: 44  
Approved with comments: 1  
Disapproved: 0  
Abstain: 1

**Virtual (Fall 2020) Meeting Agenda.**

Approved as written: 45  
Approved with comments: 0  
Disapproved: 0  
Abstain: 1

**Virtual (Fall 2020) Meeting Minutes.**

Approved as written: 45  
Approved with comments: 0  
Disapproved: 0  
Abstain: 1

Task forces gave updates to their status as well as a few areas that additional volunteers would be useful.

**Task Force 1 - Chair: Trent Williams**

Chapter 1 (Overview)  
Chapter 2 (Normative References)  
Chapter 3 (Definitions)  
Chapter 4 (Surveillance Needs)

References definitions are needed to the group. Discussion on the possible split of Chapter 4 was discussed later in the meeting.

**Task Force 2 - Chair: Poorvi Patel**

Clause 5.2 (Thermal)  
Clause 5.3 (Cooling)  
Clause 5.4 (Load)  
Task force in good shape.

**Task Force 3 - Chair: Emilio Morales**

Clause 5.5 (LTC)

Clause 5.6 (Tank)

Clause 5.7 (Conservator)

Clause 5.11 (Partial Discharge)

Review close to complete and need support with review. Please contact Emilo to volunteer to support this review.

**Task Force 4 - Chair: Bill Whitehead**

Clause 5.10 (Bushings)

Clause 5.8 (Dissolved Gas Analyzers)

Clause 5.9 (Moisture)

Clause 5.12 (Geomagnetic Induced Current)

Review is close to complete and most work will be complete in May to early June time frame.

**Task Force 5 - Chair: Zlatan Fazlic Chapter 6 (Communications)**

Feedback from Brian Sparling stated they are close to having this section ready and asking permission to use Cigre TB 620 and updating to current standards and what does the future look like with future technologies. Brian & Zlatan are working on this alone and ask for any one who would like to volunteer to review please reach out.

**Task Force 6 – Chair: Elizabeth Bray Chapter 7 (Cost Benefits)**

Requested additional volunteers with utility experience for review the document was requested.

Chair Mike Spurlock mentioned that he had filed for a two-year PAR extension on March 19, 2021 and that the NesCom has this on their agenda for May 4, 2021.

There was discussion about the potential of splitting up chapter 4 into two separate chapters. Work has been done to the proposed chapters and Chair Mike Spurlock will circulate the proposed chapters to the working group members and set up a follow up virtual meeting to discuss the possible Chapter 4 split after the working group members have had a chance to review.

Progress has continued on the C57.143 Guide and the draft version is out on the IEEE Transformers Committee webpage. This will be updated after the next round of revisions.

No other new business was brought up.

A motion to adjourn was made by Poorvi Patel and seconded by Bill Whitehead. The motion passed by unanimous approval. The meeting adjourned at 3:25 pm CST.