

# WG C57.139 Guide for the Interpretation of Gases generated in Liquid-Type On-Load Tap-Changers Fall 2025 Meeting Minutes Unapproved

Chair: Rainer Frotscher

Vice: Chair John Prunte

Secretary: Paul Boman (not present)

Meeting: Bonita Springs, FL, USA Tuesday, October 21, 2025, 3:15 – 4:30 PM

Attendance record: members: 25, guests: 39, with 13 requesting membership

Attendees list: see end of these Minutes

## Agenda

- Welcome
- Membership / Quorum
- Approval of Agenda
- Approval of Meeting Minutes F24 & S25
- Call for Patent Claims / IEEE SA Copyright Policy
- Motion: Modification of PAR
- Revision of C57.139: Preparation of 1st Draft
- Straw Ballot Period
- Preparation of 2nd Draft
- Motion: Starting Ballot process
- New Business?
- Closing Remarks / Adjourn Meeting

## Minutes

1. The WG met Tue, Oct 21 and was called to order at 3:15 pm by Chairman.  
Secretary Paul Boman could not attend, so Christopher Whitten served as secretary for this meeting. Chairman reviewed attendance requirements per IEEE standard for membership and circulated attendance rosters. Quorum was achieved with 24 Members in attendance. From the 39 guests, 13 requested membership.
2. The agenda was approved.  
Chairman requested that the agenda be approved. A motion was made by member Marcos Ferreira and 2<sup>nd</sup> by Deanna Woods, there was no objection to unanimous approval of the motion to accept the agenda of the meeting.
3. As there was no quorum in the Spring meeting, the meeting Minutes from Fall 24 and Spring 25 had to be approved. Both motions were made by Marcos Ferreira and 2<sup>nd</sup> by Deanna Woods. There was no objection to unanimous approval when asked by chairman.
4. Chairman reviewed IEEE Essential Patent Claims => none stated.
5. Chairman reviewed IEEE slides for Participant Behavior and IEEE Copyright Policy.
6. Chairman announced a necessary modification of the PAR. In the current title, "load tap changer" shall be changed to "on-load tap-changer", to comply with the language adopted by IEEE in C57.131 (Requirements for tap-changers standard).  
The modification of the title change was agreed upon by the WG and a motion was made by the chairman, 2<sup>nd</sup> by Deanna Woods. The motion carried.
  - 6.1. Chairman requested modification of the PAR title at the Insulating Fluids Subcommittee meeting the following day, Oct. 22<sup>nd</sup>, 2025.  
Motion: Modification of the current PAR title "*Guide for the Interpretation of Gases generated in*

*Liquid-Type Load Tap-Changers*” to use “*on-load tap-changer*” instead, to comply with the C57.131 standard.

The motion carried with unanimous approval. Chairman will initiate PAR modification.

7. Revision of C57.139 document:

The first draft of the new C57.139 version was created through a process of 14 virtual meetings and many emails during the past months. The draft now contains 60 pages instead of 43 of the previous version, which means that many new information and guidelines have been added. The goal was to make the Guide more helpful for daily practice than the previous one.

The chairman highlighted and explained several new sections:

7.1. Data cleaning, analysis, statistics and visualization has been completed by TF1. All methods used were documented and will be kept available for future revisions of the guide. In contrast to the old version of the guide, the guidelines in the new version are based on more than 180'000 OLTC DGA records, which is far more than the data collected for the previous version. With this, limit values and guidelines now represent a huge majority of all OLTC models worldwide.

7.2. Luiz Cheim expressed concern that using TDCG in the “thumb rules” was outdated and it is not being used in C57.104 and C57.155 anymore. For example, CO may reach high ppm values without indicating any malfunction. He suggested that NEI is better and has been adopted by these guides accordingly. Chairman said that, referring to DGA, tap-changers cannot be treated the same as transformers, because the range of ppm values indicating normal behavior is much greater for OLTCs than it is for transformers. So, generic guidelines are necessarily more vague, which justifies the use of TDCG. Luiz expressed concern that some gases with different energy formation may overshadow other gases. The issue was further discussed and chairman accepted the comment for further consideration and possible modification of section 6.2.4 “Overall guidelines”.

7.3. After reviewing Figure D.4 with the WG, Patrycja Jarocz stated that figures can NOT have colors that convey meaning. She suggested that Figure D.4 be adjusted accordingly. All color in the document should be revised to no longer be required to convey meaning. Chairman replied that there are several recently approved IEEE guides which use colors in charts and figures, e.g. C57.143. Patrycja suggested to add a legend with symbols assigned to colors. With this, colors can be identified on a b/w print. Chairman accepted the comment for further consideration.

8. Chairman thanked the active Task Force members for all of their help with the document.

9. The Draft was sent out to members and selected guests on Sept 8, 2025 for Straw Ballot. Many comments were received and processed.  
The WG now sees the revised Draft as ready for SA Ballot.

10. Chairman requested start of SA Ballot at the Insulating Fluids Subcommittee meeting the following day, Oct. 22<sup>nd</sup>, 2025.

10.1. Stephanie Mabrey made a motion for the document to go to SA ballot, Marcos Ferreira 2<sup>nd</sup> the motion. No objections were made to unanimous approval of the motion, the motion carried. Chairman will now initiate SA Ballot process.

11. Stephanie Mabrey made a motion to form a Comment Resolution Group (CRG) to address any comments that are created by the balloting process, with the authority of the CRG to change the document accordingly. The motion was 2<sup>nd</sup> by Deanna Woods and there were no objections to unanimous approval of the motion, the motion carried.

John Prunte collected 8 volunteers: Toni Mellin, Joshua Yun, Roberto da Silva, Stephanie Mabrey, Zach Draper, Deanna Woods, Florin Faur, Cole Van Dreele.

12. Chairman showed the proposed timeline for the Ballot process. A revised document including all comments from the Ballot should be ready at the next meeting Spring 26, to keep the deadline. The PAR expires Dec 26.

13. The meeting was adjourned at 4:30.

**Attendees list:**

| <b>First Name</b> | <b>Name</b> | <b>Affiliation</b>              | <b>Status/<br/>Membership<br/>Request</b> |
|-------------------|-------------|---------------------------------|-------------------------------------------|
| John              | Beuke       | WEG                             | Guest                                     |
| Mike              | Bonn        | Soltex                          | Guest                                     |
| David             | Campbell    | Baron USA                       | Guest *)                                  |
| Edward            | Casserly    | Ergon                           | Member                                    |
| Juan              | Castellanos | Prolec GE                       | Guest                                     |
| Marcelo           | Catugas     | Neil Service Inc.               | Member                                    |
| Mark              | Cheatham    | Megger                          | Guest *)                                  |
| Luiz              | Cheim       | Hitachi Energy                  | Member                                    |
| Craig             | Colopy      | Retired from Eaton              | Guest                                     |
| Randy             | Cox         | Megger                          | Guest *)                                  |
| Marcos            | Czernorucki | Hitachi Energy                  | Guest                                     |
| Roberto           | da Silva    | MR                              | Member                                    |
| Mario             | De La Garza | Hyundai Power Transformers      | Guest                                     |
| Sami              | Debass      | EPRI                            | Member                                    |
| Zachary           | Draper      | Delta-X Research                | Member                                    |
| Hakim             | Dulac       | APT                             | Guest *)                                  |
| Florin            | Faur        | Prolec GE                       | Member                                    |
| Zlatan            | Fazlic      | Camlin Energy                   | Member                                    |
| Todd              | Felton      | MVA Diagnostics                 | Member                                    |
| Roger             | Fenton      | Fenton Solutions                | Guest                                     |
| Marcos            | Ferreira    | Engineering Consulting Services | Member                                    |
| Rainer            | Frotscher   | MR                              | Chair                                     |
| Jean-Philippe     | Gagnon      | Qualitrol                       | Guest *)                                  |
| Joshua            | Garner      | RESA Power                      | Guest                                     |
| Niklas            | Gustavsson  | Hitachi Energy                  | Member                                    |
| Attila            | Gyore       | MIDEL and MIVOLT Fluids Ltd     | Member                                    |
| Kevin             | Hampton     | Siemens Energy                  | Guest                                     |
| Traci             | Hopkins     | H2Scan                          | Member                                    |
| Nathan            | Jacob       | Camlin Energy                   | Guest *)                                  |
| Patrycja          | Jarosz      | IEEE SA                         | Guest                                     |
| Chanmin           | Jeong       | HD Hyundai                      | Guest *)                                  |
| Reeve             | Johnson     | Hitachi Energy                  | Guest                                     |
| Kurt              | Kaineder    | Trench Austria                  | Guest                                     |
| Ashwini           | Labh        | Hitachi Energy                  | Member                                    |
| Stefan            | Lembacher   | Siemens Energy                  | Guest                                     |
| Cesar             | Lizcano     | SHELL USA, Inc                  | Guest *)                                  |
| Tiffany           | Lucas       | Prolec SPX Waukesha             | Guest *)                                  |
| Stephanie         | Mabrey      | AVO Diagnostics                 | Member                                    |
| Francis           | Mantoan     | Siemens Energy                  | Guest *)                                  |

|             |                   |                            |            |
|-------------|-------------------|----------------------------|------------|
| Nayo        | Martinez          | ZTZ Services               | Guest *)   |
| Toni        | Mellin            | Vaisala                    | Member     |
| Michael     | O'Brien           | Trilliumus                 | Guest      |
| Anastasia   | O'Malley          | Consolidated Edison Co.    | Guest      |
| Nick        | Perjanik          | AVO Diagnostics            | Member     |
| John        | Pruente           | APC Construction Ilc       | Vice Chair |
| Manuel      | Quinones          | GE Vernova                 | Guest *)   |
| Ulf         | Radbrandt         | Hitachi Energy             | Guest      |
| Chris       | Rutledge          | GE Vernova                 | Guest *)   |
| Mickel      | Saad              | Hitachi Energy             | Member     |
| Jesus       | Sanchez Rodriguez | Vertiv                     | Guest      |
| Alfons      | Schrammel         | Siemens Energy             | Guest      |
| William     | Solano            | Voltyx                     | Member     |
| Chelsea     | Spengler          | DeltaX Research            | Guest      |
| Olivier     | Uhlmann           | Reinhausen Canada          | Guest      |
| Cole        | Van Dreel         | ATC                        | Member     |
| Robert      | Vary              | Reinhausen Mfg.            | Guest      |
| Jonathan    | Walmsley          | GE Vernova                 | Guest      |
| Bill        | Whitehead         | Reinhausen Manufacturing   | Guest      |
| Christopher | Whitten           | Hitachi Energy             | Member     |
| Deanna      | Woods             | PTT                        | Member     |
| Chris       | Wright            | Spearmint Energy           | Guest      |
| Kwasi       | Yeboah            | Megger                     | Guest *)   |
| Samuel      | Young             | Hitachi Energy             | Guest      |
| Joshua      | Yun               | Virginia Transformer Corp. | Member     |

\*) : requesting membership