# TF Next Revision of C57.104 "Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers"

Fall 2021 Meeting, WWW, November 15, 2021, 15H45 to 17H00. Session 4

Claude Beauchemin, TJH2b Analytical Services, Chair

Norman Field, Stantec, Vice-chair

Hali Moleski, SD Myers, Secretary

# Agenda

1. Presentation of Agenda
2. Welcome & Introductions
3. Patent Call
4. Copyright call
5. Approval of Spring 2021 meeting minutes
6. Presentations
    - “Online DGA Monitoring Techniques” by Donald Lamontagne
    - Claude Beauchemin: "Summary of CIGRE WG D1/A2.77 Activities"
    - Running list of corrections: No new correction
    - Other DGA WG activities
7. Discussion
8. Old business
9. Adjourn

# Participants have a duty to inform the IEEE

- **Participants shall inform the IEEE (or cause the IEEE to be informed) of the identity of each holder of any potential Essential Patent Claims of which they are personally aware if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents**

- **Participants should inform the IEEE (or cause the IEEE to be informed) of the identity of any other holders of potential Essential Patent Claims**

**Early identification of holders of potential Essential Patent Claims is encouraged**

# Ways to inform IEEE

- **Cause an LOA to be submitted to the IEEE-SA (patcom@ieee.org); or**
- **Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or**
- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

# Other guidelines for IEEE WG meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**
  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**
  - **Don't discuss specific license rates, terms, or conditions.**
    - Relative costs of different technical approaches that include relative costs of patent licensing terms may be discussed in standards development meetings.
      - **Technical considerations remain the primary focus**
  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**
  - **Don't discuss the status or substance of ongoing or threatened litigation.**
  - **Don't be silent if inappropriate topics are discussed … do formally object.**

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**For more details, see *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and *Antitrust and Competition Policy: What You Need to Know* at http://standards.ieee.org/develop/policies/antitrust.pdf**

# Patent-related information

**The patent policy and the procedures used to execute that policy are documented in the:**

- ***IEEE-SA Standards Board Bylaws***
  **(http://standards.ieee.org/develop/policies/bylaws/sect6-7.html#6)**
- ***IEEE-SA Standards Board Operations Manual***
  **(http://standards.ieee.org/develop/policies/opman/sect6.html#6.3)**

**Material about the patent policy is available at *http://standards.ieee.org/about/sasb/patcom/materials.html***

**If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org**

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- IEEE SA Copyright Policy, see
  Clause 7 of the IEEE SA Standards Board Bylaws
  https://standards.ieee.org/about/policies/bylaws/sect6-7.html#7
  Clause 6.1 of the IEEE SA Standards Board Operations Manual
  https://standards.ieee.org/about/policies/opman/sect6.html

- IEEE SA Copyright Permission

- https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/permissionltrs.zip

- IEEE SA Copyright FAQs

- http://standards.ieee.org/faqs/copyrights.html/

- IEEE SA Best Practices for IEEE Standards Development

- http://standards.ieee.org/develop/policies/best_practices_for_ieee_standards_development_051215.pdf

- Distribution of Draft Standards (see 6.1.3 of the SASB Operations Manual)

- https://standards.ieee.org/about/policies/opman/sect6.html

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# 5. Approval of Spring 2021 meeting minutes

26Apr2021 - TF Minutes C57.104 Next Steps  Unapproved.pdf

# 6.a Presentation

Annex A opportunity for improvement: *Adapt application of DGA interpretation to the use of online DGA monitors, specifically regarding the rate of change calculations.*

"Online DGA Monitoring Techniques“

By Donald Lamontagne

# 6.b CIGRE D1/A2.77 WG

Annex A opportunity for improvement: “Build an industry wide database of DGA, including all pertinent transformer information, to support the future evolution of this guide”.

CIGRE D1/A2. 77 WG “Liquid Tests for Electrical Equipment”: an update by Claude Beauchemin

# 6.b CIGRE D1/A2.77 WG

Work in progress: Suggest to CIGRE the creation of a data repository to retain data collected during WG work

# 6.b CIGRE D1/A2.77 WG

Draft proposal:

"It had been observed by various members of the WG that obtaining the data required to develop improved diagnostic techniques, such as for example DGA interpretation or insulating liquids quality assessment, is often one of the main difficulties of the WG task.

# 6.b CIGRE D1/A2.77 WG

CIGRE WG are per their nature temporary (2 – 3 years) and group typically a few dozen of world experts tasked to address specific questions about topics of interest to the general community of energy production.

# 6.b CIGRE D1/A2.77 WG

In most cases, addressing those specific questions require large amount of data to be available for review and discussion in order to produce improvements in methods of analysis or in procedures of operation. Obtaining this data has proven to be quite difficult, requiring a large amount of time and efforts, taking a valuable part of the time and resources available to the WG.

# 6.b CIGRE D1/A2.77 WG

Unfortunately, when the WG conclude its task and is disbanded, the accumulated data is lost, as there is no "universal" permanent repository available where the WG could transfer the data it accumulated for the benefit of the next WG that will address a similar topic in the future.

# 6.b CIGRE D1/A2.77 WG

A good example is data for Dissolved Gases Analysis (DGA). There have been several WG working on the topic of DGA interpretation in the past few decades and several Technical Brochures have been issued on this topic (In the last 15 years: TB 296, TB 409, TB 443, TB 771 and TB 783). Each time the WG convenor had to request various WG members to supply "had hoc" data in order to generate the interpretation method updates or new limits tables.

# 6.b CIGRE D1/A2.77 WG

After each of those WG had completed their work, the accumulated data was not retained.

We therefore propose the constitution of a central repository to collect and conserve data accumulated by the various WG. This repository could either be hosted by the CIGRE, the IEC or be a joint operation.

# 6.b CIGRE D1/A2.77 WG

We recognise that such endeavor will have to address several possible roadblocks to be successful, but we consider the required effort to be worthwhile

Some of the items that will need to be addressed for success are as follow:

# 6.b CIGRE D1/A2.77 WG

- Protection of data supplier's anonymity with its associated NDA and other legal considerations (including "opting out" option from specific future WG).
- Data security.
- Universal transformer "Basic data set" containing the information of use for various tasks (e.g. Type, size, rating, insulating liquid, oil preservation system, loading….)

# 6.b CIGRE D1/A2.77 WG

- Uniformized data format (It will be different for each different type of data but need to be uniform withing a category, regardless of the data supplier).
- Long term data storage and maintenance.
- Control of data access to prevent missuses.
- Clear usage protocols and users obligations, including users NDA.

# 6.b CIGRE D1/A2.77 WG

Some of the work already performed by various WG, specifically or partially, on data handling and integration (for example, TB 298, TB 630, TB 706 and TB 761) probably contain information useful in addressing some of the items mentioned above.

# 6.c Running list of corrections

No new items

# 6.d Publication of Interest

"Near-Term Failure of Transformers Using Reliability Statistics on Dissolved Gas Analysis".

by Z.H. Draper and J. J. Dukarm.

In 2021 CIGRE Canada Conference, number 408, Toronto ON, October 2021.

# 6.d Publication of Interest

"The Data Behind the Numbers: IEEE C57.104TM-2019 DGA Interpretation Guide“

By C. Beauchemin, L. Cheim and N. Field.

Transformer Technology Magazine,

December 2021.

# 6.e Other WG on DGA

**Monday 10H50**: WG Guide for DGA in Silicone PC57.146, J Karas

**Monday 14H20**: WG Transformer Monitoring C57.143, M. Spurlock

**Tuesday 10H50**: TF Guide DGA for Factory Temp Rise Tests - C57.130, J. Foschia

**Tuesday 14H20**: WG Guide DGA in Ester-Immersed Transformers PC57.155, A. Sbravati

**Tuesday 15H45**: TF Revision of Guide for DGA in LTCs C57.139, R. Frotscher

# 7. Discussion

Any Suggestions? Additions?
Other business?

# 8. Old business

Any Old business?

# Adjourn

Thanks everyone

Stay safe