

8/31/2015

Wallach, David J
WTI TF 2
Insulation Life Subcommittee – TF Winding Temperature Indicators

Bruce Forsyth
Chair, Insulation Life Subcommittee
IEEE Transformers Committee

Dear Bruce,

As you recall, the Insulating Fluids Subcommittee authorized a Task Force to recommend a path forward regarding the work that has been done by the Task Force for Winding Temperature Indicators under the leadership of Phil McClure.

Our task force has met three times by telephone and circulated various emails to develop the following recommendations:

1. Recommend a “scope” change from a focus on Winding Temperature Indicators solely and expand to the larger topic of transformer temperature measurement. This scope includes Winding Temperature Indicators.
2. The proposed document title is “IEEE Guide for Transformer Temperature Measurement.”
3. The proposed PAR scope is as follows:
 - a. This guide discusses and recommends methods of temperature measurement in transformers. Thermal well types as well as sensors for both indirect and direct temperature measurement are included. Temperature measurement applications including fluid, winding, LTC, other parts and ambient temperatures are discussed.
4. The proposed purpose is as follows:
 - a. The purpose of this guide is to assist both equipment suppliers and end users select and apply temperature measurement techniques to confirm transformer performance, monitor transformer condition, control transformer cooling, and react to atypical operating conditions. Temperature is one of the most basic transformer parameters that can be measured but also one of the most important.
5. While not required for a PAR, the TF collected thoughts and developed a draft document outline in Appendix A to support scope development and is included as information. This outline can be provided to a potential Working Group as a starting point.

The task force suggests that this guide can be used and referenced by other documents that deal with transformer temperature including C57.12.00, C57.12.10, C57.12.36, C57.91, C57.119, and C57.143 to name a few.

Please place a discussion of this task force report on the agenda under old business for November. We would plan to follow up discussion with a motion to approve submission of a PAR.



I would like to acknowledge the membership of this Task Force in development of this recommendation. The list of members is included in Appendix B

We look forward to your favorable reply.

Best Regards,

Wallach, David J

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Appendix A

Draft Document Outline

- 1) Scope (sensors installed, permanent installation)
- 2) Purpose
- 3) Normative References
- 4) Definitions
- 5) Thermal Wells
- 6) Sensors for indirect measurement
 - a) RTDs
 - b) Thermocouples
 - c) Thermistors
- 7) Sensors for direct measurement
 - a) Fiber Optic
- 8) Applications
 - a) Top Oil/Fluid
 - b) Bottom Oil/Fluid
 - c) Ambient
 - d) Winding
 - i) Simulated
 - ii) Calculated
 - iii) Direct
 - e) Load Tap Changers
 - i) Main Tank to LTC Tank Differential
 - f) Core
 - g) Other Parts
 - i) Tie Plates
 - ii) Clamps
- 9) Transformer Design Parameters
 - a) Average Winding Gradient
 - b) Hot Spot Gradient



Appendix B

Task Force Membership

David Wallach Chair

Emilio Morales Vice-chair

Gary Hoffman

Bob Thompson

Phil McClure

Mark Tostrud

Zan Kiparizoski

Josh Herz

Shamaun Hakim

Jeff Golarz

Sarinder Sandhu

Kipp Yule

Kiran Vedante

