

AGENDA

For the Development of

PC57.107; Recommended Practice for Developing Design Specific Operational Limits for Transformers Connected to Generators or Power Systems Subject to Significant Short-term Changes in Voltage and/or Frequency

Remote Virtual Meeting – WEBEX SESSION 3

Tuesday, November 16, 2021, 12:55-2:10 PM (Central Standard Time)

Joe Watson – Chair, Ramsis Girgis - Vice Chair, Secretary – Open

1. Call to order
2. Determination of a Quorum (First meeting of the WG, so N/A)
3. This is the first meeting of this WG and all attendees wishing to become a member should send an email to joe_watson@ieee.org with the request.
4. Project Schedule (PAR Approval Date: 9/23/2021 PAR Expiration Date: 12/31/2025)
 - a. Fall 2021 Meeting: Establish content, determine authors for each section and appoint TF's for outside resources. Develop Draft 1 before the Spring 2022 meeting.
 - b. Spring 2022 Meeting: Reports from authors and TF's on Draft 1. Complete Draft 2 before the Fall 2022 meeting.
 - c. Fall 2022 Meeting: Review of Draft 2, Initiate Straw Ballot #1. Comment resolution and new Draft before Spring 2023 meeting
 - d. Spring 2023 Meeting: Review of new Draft, Initiate Straw Ballot #2. Comment resolution and new Draft before Spring 2023 meeting
 - e. Fall 2023 Meeting: WG and SC Approval to Issue Final Draft for Ballot
 - f. Complete balloting process by mid-2024
5. Discussion of Proposed Sections and Content (Attached) and Volunteers for each part
6. Adjourn

Proposed Sections and Content

Section 1: Overview

Section 1.1: Scope: This recommended practice describes procedures for developing design-specific operational limits for liquid-immersed power transformers that are connected to generators or power systems that are subjected to significant short duration increases in the core excitation caused by significant changes in the voltage and/or frequency levels.

Section 1.2: Purpose: The purpose of this recommended practice is to provide procedures for developing design-specific V/Hz vs. time curves for use by manufacturers of power transformers. These curves provide recommended operating limits for different types of transformers, different designs and different insulation materials used in those power transformers. Such more accurate and more design-specific V/Hz curves aid users in the proper design and settings of protective relay protection systems for power transformers.

Section 1.3: Word usage: IEEE Boilerplate

Section 2: Normative References

Section 3: Definitions, acronyms, and abbreviations

Section 3.1: Definitions

Section 3.2: Acronyms and abbreviations

Authors: Sections 2, 3, 3.1 and 3.2 will need to be developed after the document has been mostly written

Section 4: Introduction to Phenomenon of short term overexcitation (**We have text from the TF's work as a start**)

- Relay Practices (**Protection specialists**)
- Existing short term overexcitation curves
 - How it was developed
 - Issues with these
 - Need for this recommended practice document

Section 5: Impact of short term overexcitation on Power Transformers (**We have text from the TF's work as a start**)

- Heating of structural Parts

- Core form transformer
- Shell form transformer

Resulting in Oil bubbles, gassing, and Insulation deterioration

Section 6: Methodology for developing Short term overexcitation criteria for transformers (**We have text from the TF's work as a start**)

Section 7: Recommended short time temperature limits for metal parts and insulating materials (These limits may require a TF for the WG and support from experts on the Insulation Life SC)

- Metal parts
- Pressboard
- Laminated Wood
- TIV
- Nomex
- Fiberglass-type materials

Appendix: Examples of V/Hz Curves for Various Transformer Designs

Annex A: Bibliography