

PC57.119

Submitter Email: tprevost78@gmail.com

Type of Project: Revision to IEEE Standard C57.119-2001

PAR Request Date: 22-Aug-2014

PAR Approval Date: 27-Oct-2014

PAR Expiration Date: 31-Dec-2018

Status: PAR for a Revision to an existing IEEE Standard

Root Project: C57.119-2001

1.1 Project Number: PC57.119

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Title: Recommended Practice for Performing Temperature Rise Tests on Oil-Immersed Power Transformers at Loads Beyond Nameplate Ratings

Changes in title: ~~IEEE~~ Recommended Practice for Performing Temperature Rise Tests on Oil-Immersed Power Transformers at Loads Beyond Nameplate Ratings

3.1 Working Group: Insulating Life - Temp Rise Test Above NP Rating Working Group (PE/TR/InsLife-WGC57.119)

Contact Information for Working Group Chair

Name: Gael Kennedy

Email Address: grkenne@gmail.com

Phone: 402.362.1312

Contact Information for Working Group Vice-Chair

None

3.2 Sponsoring Society and Committee: IEEE Power and Energy Society/Transformers (PE/TR)

Contact Information for Sponsor Chair

Name: Donald Platts

Email Address: donplatts@ieee.org

Phone: 610-657-4822

Contact Information for Standards Representative

Name: William Bartley

Email Address: wbartley@ieee.org

Phone: 860 205 0803

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 11/2014

4.3 Projected Completion Date for Submittal to RevCom: 10/2015

5.1 Approximate number of people expected to be actively involved in the development of this project: 12

5.2 Scope: This recommended practice covers temperature rise test procedures for determining those thermal characteristics of power transformers needed to appraise the transformer's load carrying capabilities at specific loading conditions other than rated load.

Changes in scope: ~~Write This Recommended~~ recommended Practice practice for covers performing temperature Temperature rise test Tests procedures on Power Transformers for the determining purpose those of thermal A characteristics Determining the Thermal Characteristics of a power transformer transformers required needed to calculate appraise the Thermal transformer's Performance load of carrying a capabilities Transformer at loaded specific loading Loads conditions other than nameplate rating. B. Verify that a Transformer can be loaded with a specified load profile without exceeding specified Temperature Rises. C. Assess a Transformer performance during loading simulating A LOAD CYCLE including loads in excess of nameplate rating.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: These recommended test procedures for performing temperature rise tests on power transformers are for the purpose of

Changes in purpose: ~~Present These Standard~~ recommended Temperature test Rise procedures Tests, for performing temperature rise tests on power transformers are for the purpose of a) Determining the thermal characteristics of a transformer needed to verify appraise the

a) Determining the thermal characteristics of a transformer needed to

appraise the thermal performance of a transformer at loads other than nameplate rating

- b) Verifying that a transformer can be loaded with a specified load profile without exceeding specified temperature rise
- c) Assessing a transformer's performance during transient loading, simulating a load cycle that includes loads in excess of nameplate rating

Tests performed in accordance with Clause 9 are for the purpose of determining transformer thermal characteristics in a consistent manner. Data may then be accumulated from a large number of transformers and used to evaluate the accuracy of the equations and the empirical constants used in the loading guides.

Tests performed in accordance with Clause 10 are for the purpose of demonstrating the thermal effects of loading a transformer with a specified sequence of loads, including loads beyond nameplate rating.

Tests performed in accordance with Clause 11 are for the combined purposes of determining the thermal characteristics of a transformer and demonstrating the thermal effects of loading with a designated load cycle. This is accomplished by performing temperature rise tests at three loads, similar to Clause 9, except the three loads are selected to simulate the thermal effects of a specific load cycle.

It is not intended that all of these procedures be performed on a transformer design. It is intended that only one of the following combination of test procedures be specified:

- a) Clause 9 only, when thermal characteristics are to be determined.
- b) Clause 10 only, when only verification of complying with temperature limits when loaded to a specific load profile is needed.
- c) Clause 9 plus Clause 10, when both thermal characteristics and verification of compliance with temperature limits when loaded to a specific load profile are needed.
- d) Clause 11 when both thermal characteristics and verification of compliance with temperature limits when loaded to a specific load profile are required, and the load profile can be represented with three steady state loads.

The user should specify which of the test procedures are required at the time of specification.

A further purpose of these procedures is to obtain information with respect to possible loading limitations imposed on the transformer by oil levels and ancillary equipment when the transformer is operated at loads beyond nameplate rating.

5.5 Need for the Project: IEEE Recommended Practice C57.119 is nearing its end of life. It is still needed and is technically valid as it is currently written. However, the Nomenclatures used to note reference Standards are not consistent with the current IEEE-SA format and need to be updated to meet the existing IEEE-SA Standards Formatting.

5.6 Stakeholders for the Standard: The stakeholders of this Recommended Practice include the Electric Utility Users, Commercial and Industrial Users, Consultants, Manufacturers of oil-immersed power transformers, and Test Laboratories.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

thermal performance of a transformer at loads other than nameplate rating b) Verifying that a transformer can be loaded with a specified load profile without exceeding specified temperature rise c) Assessing a transformer's performance during transient loading, simulating a load cycle that includes loads in excess of nameplate rating Tests performed in accordance with Clause 9 are for the purpose of determining transformer thermal characteristics in a consistent manner. Data may then be accumulated from a large number of transformers and used to evaluate the accuracy of the equations and the empirical constants used in the loading guides. Tests performed in accordance with Clause 10 are for the purpose of demonstrating the thermal effects of loading a transformer with a specified sequence of loads, including loads beyond nameplate rating. Tests performed in accordance with Clause 11 are for the combined purposes of determining the thermal characteristics of a transformer and demonstrating the thermal effects of loading with a designated load cycle. This recommended practice accomplished document by provides performing temperature rise tests at three loads, similar to Clause 9, except the additional three loads required are for selected assessing to simulate the thermal effects of a specific load cycle. It is not intended that all of these procedures be performed on a transformer design. It is intended that only one of the following combination of test procedures be specified: a) Clause 9 only, when thermal characteristics are to be determined. b) Clause 10 only, when only verification of complying with temperature limits when loaded to a specific load profile is needed. c) Clause 9 plus Clause 10, when both thermal characteristics and verification of compliance with temperature limits when loaded to a specific load profile are needed. d) Clause 11 when both thermal characteristics and verification of compliance with temperature limits when loaded to a specific load profile are required, and the load profile can be represented with three steady state loads. The user should specify which of the test procedures are required at the time of specification. A further purpose of these procedures is to obtain information with respect to possible loading limitations imposed on the transformer by oil levels and ancillary equipment when the transformer is operated at loads beyond nameplate rating.

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

Is it the intent to develop this document jointly with another organization?: No

8.1 Additional Explanatory Notes (Item Number and Explanation): It is intended that this Recommended Practice will be editorially updated and then issued for review and ballot.