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IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type Distribution and Power Transformers

IEEE Power and Energy Society

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Approved 5 December 2015

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Abstract: Recommendations for operation and maintenance of dry-type distribution and power transformers are provided.

Keywords: application, distribution transformers, dry-type, IEEE C57.94™, installation, maintenance, operation power transformer, testing

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Introduction

This introduction is not part of IEEE Std C57.94-2015, IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type Distribution and Power Transformers.

This recommended practice is a revision of IEEE Std C57.94-1982, IEEE Recommended Practice for Installation, Application, Operation, and Maintenance of Dry-Type General Purpose Distribution and Power Transformers. The changes in this revision reflect current advancements in technologies including updates to recommended and optional pre-service and periodic test lists.

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1. Overview

1.1 Scope

~~1.1 Transformers Covered~~

This recommended practice covers general recommendations for the application, installation, operation, and maintenance of all single and polyphase ventilated, non-ventilated, and sealed dry-type ~~general purpose,~~ distribution~~,~~ and power~~auto~~ transformers ~~of the following~~ or autotransformers, including those with solid-cast and/or resin encapsulated windings except as follows ~~types~~:

~~1) Ventilated, indoor and outdoor, self-cooled cooled or forced air cooled~~

~~2) Nonventilated, indoor and outdoor, self-cooled or forced air cooled~~

~~3) Sealed, indoor and outdoor, self-cooled~~

~~1.2 Transformers Not Covered~~

~~This recommended practice does not apply to the following:~~

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a) Instrument transformers

b) Step~~-voltage~~- and induction-voltage regulators

c) Arc-furnace transformers

d) Rectifier transformers

e) Specialty and general purpose transformers

f) Mine transformers

g) Testing transformers

h) Welding transformers

~~NOTE — Both ventilated and nonventilated transformers may be furnished with windings utilizing materials such as solid insulating material which allow or require different practices from those required in this recommended practice. In such equipment the recommendations in this recommended practice may be modified by specific manufacturer's recommendations.~~

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1.2 Purpose

The ~~This~~ recommended practice is intended for general use in the application, installation, operation, and maintenance of dry-type transformers manufactured in accordance with ~~ANSI/~~IEEE Std C57.12.01~~-1979 [10]~~[1], ANSI C57.12.50~~-1980 [2]~~[B1], ANSI C57.12.51~~-1981 [3],~~ [B2], and ANSI C57.12.52~~-1981 [4] and ANSI/NEMA ST 20-1972 [13]~~[B3]. Familiarity with other ~~American National~~ standards applying to dry-type transformers and to their protection is assumed and the provisions of those standards are indicated herein only for clarity.

2. Normative references

The following referenced documents are indispensable for the application of this document (i.e., they must be understood and used, so each referenced document is cited in text and its relationship to this document is explained). For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments or corrigenda) applies.

ANSI/NFPA 70~~-1981~~, National Electrical Code® (NEC®).[1]

[1] The National Electrical Code is published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. Copies are available from the Sales Department of American National Standards Institute, 1430 Broadway, New York, NY 10018.

~~[1] The numbers in brackets correspond to the references listed in Section 2 of this standard.~~

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IEEE ~~ANSI~~ C2~~-1981~~, National Electrical Safety Code[2]® (NESC)®.[2]

IEEE Std 142~~-1972~~™, IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems (*IEEE Green Book*™).[3, 4]

IEEE Std ~~ANSI/IEEE~~ C57.12.01~~-1979~~™, IEEE Standard General Requirements for Dry-Type Distribution and Power Transformers.

IEEE Std ~~ANSI/IEEE~~ C57.12.91~~-1979~~™, IEEE Standard Test Code for Dry-Type Distribution and Power Transformers.

IEEE Std C57.96~~-1959~~™, IEEE ~~American National Standard~~ Guide for Loading Dry-Type Distribution and Power Transformers ~~(Appendix to ANSI C57.12 standards)~~.

IEEE Std C57.110™, IEEE Recommended Practice for Establishing Liquid-Filled and Dry-Type Power and Distribution Transformer capability When Supplying Nonsinusoidal Load Currents.

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