

IEEE Standard for Requirements for Distribution Transformer Tank Pressure Coordination

IEEE Power and Energy Society

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of the
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Abstract: Certain mechanical requirements relating to tank strength as well as static and dynamic tank pressure mitigation for liquid-immersed distribution transformers are covered in this standard. The electrical and mechanical requirements of any accessory devices that may be supplied with the transformer are not covered in this standard. It is intended to define the mechanical performance requirements to prevent permanent tank deformation or rupture of distribution transformers covered under this standard. These requirements will provide a more standard design of transformer tank and associated components related with both static and dynamic pressure coordination.

Keywords: distribution transformer, fault current, IEEE C57.12.39™, liquid preservation, PRD, pressure, pressure coordination, pressure relief, pressure relief device, pressure relief plug, pressure relief valve, PRV, rapid transient pressure, tank, tank deformation, tank rupture, withstand

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Introduction

This introduction is not part of IEEE Std C57.12.39-2017, IEEE Standard for Requirements for Distribution Transformer Tank Pressure Coordination.

The conception of this standard was derived from the need to clarify the requirements associated with the tank pressure withstand and the associated pressure relief accessories.

Currently, the static pressure mitigation is covered by each individual product standard for distribution transformers. Dynamic pressure mitigation is not covered on some of these standards. This standard will be used to establish consistency between transformer product standards and help create designs of these products that meet consistent requirements for pressure mitigation, providing definitions for the different means of mitigation of tank pressure. This standard will be utilized by users and vendors in specifying and manufacturing these products.

The basis for the development of this standard was all of the IEEE product standards for distribution, power, and submersible transformers. The requirements associated with tank pressure were analyzed to derive a single standard set of requirements, with the purpose of serving as a single source of reference for future revisions of the product standards.

Contents

1. Overview	10
1.1 Scope	10
1.2 Purpose	10
2. Normative references	10
3. Definitions, acronyms, and abbreviations	11
3.1 Definitions	11
3.2 Acronyms and abbreviations	11
4. Mechanical characteristics	11
4.1 Liquid preservation	11
4.2 Nominal pressure	12
4.3 Rapid transient pressure	13
5. Design tests for fault current capability of overhead distribution transformer enclosures	14
5.1 Objective	14
5.2 General requirements	14
5.3 Test duties	14
5.4 Test duty 1—An arcing fault in an enclosure	15
5.5 Test duty 2—For enclosures with internal fusible elements	15
5.6 Test results	15
Annex A (informative) Flowchart for fault current capability test	17
Annex B (informative) Coordination between tank integrity and pressure relief	18
Annex C (informative) Bibliography	20