

IEEE Standard for Requirements for Distribution Transformer Tank Pressure Coordination

IEEE Power and Energy Society

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IEEE Transformers Committee

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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.

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