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IEEE Guide for Interpretation of Gases Generated in Natural Ester and Synthetic Ester-Immersed Transformers

IEEE Power and Energy Society

Sponsored by the
Transformers Committee

IEEE
3 Park Avenue
New York, NY 10016-5997
USA

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Abstract: Natural and synthetic ester-immersed transformers are handled in this guide. The following is addressed in this guide:
a) The theory of combustible gas generation in a natural and synthetic ester-filled transformer
b) Interpretation of the dissolved gas analysis results
c) Recommended actions based on the interpretation of dissolved gas analysis results
d) A bibliography of related literature

Keywords: DGA, dielectric liquid, dissolved gas analysis, high oleic sunflower liquid, IEEE C57.155™, insulating liquid, liquid-immersed transformer, natural ester, rapeseed liquid, soybean liquid, synthetic ester

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IEEE Guide for Interpretation of Gases Generated in Natural Ester and Synthetic Ester-Immersed Transformers

1. Overview

1.1 Scope

The guide's application is for natural and synthetic ester-immersed transformers. This guide addresses the following:

- The theory of combustible gas generation in a natural and synthetic ester-filled transformer.
- Interpretation of the dissolved gas analysis results.
- Recommended actions based on the interpretation of dissolved gas analysis results.
- A bibliography of related literature.

1.2 Purpose

The purpose of this guide is to assist the transformer operator in evaluating dissolved gas analysis (DGA) data obtained from natural ester and synthetic ester-filled transformers.