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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 20111.6-2022

Electrical insulation systems - Procedures for thermal evaluation - Part 6: Multifactor evaluation with increased factors during diagnostic testing

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Table of Contents

foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents"

drafted.

This document is part 6 of GB/T 20111 "Specifications for Thermal Evaluation of Electrical Insulation Systems". GB/T 20111 has released the following

part.

--- Part 1.General requirements for low voltage;

--- Part 2.Particular requirements for general models for scattered-wound winding applications;

--- Part 3.Particular requirements for encapsulated coil models Random wound winding electrical insulation system (EIS);

--- Part 4.Guidelines for selection of test methods for evaluating and classifying electrical insulation systems;

--- Part 5.Applications with a design life of 5000h and below;

--- Part 6.Multifactorial assessment of increased factors in diagnostic tests.

This document is equivalent to IEC 61857-32.2019 "Thermal evaluation procedures for electrical insulation systems - Part 32.Addition in diagnostic tests

Multifactor Evaluation of Factors.

The following minimal editorial changes have been made to this document.

a) In order to harmonize with the existing standards, the name of the standard is changed to "Thermal Evaluation Procedures for Electrical Insulation Systems Part 6.During Diagnostic Tests"

Multifactor Assessment of Increasing Factors."

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

In the process of evaluating the heat resistance level of the electrical insulation system (EIS), in addition to the heat factor related to the application, it can be determined according to the actual application of the product.

In addition, other evaluation factors should be added.

IEC 60505 proposes four aging factors that affect the performance of electrical products under various operating conditions. In IEC 60505, the T table

Thermal factor, E for electrical factor, E for environmental factor and M for mechanical factor. In this document, the environmental factor (E) is replaced by the ring

environment factor (A) to eliminate possible confusion caused by two factors represented by the same letter. In this document, T stands for thermal factor, E stands for

Electrical factor, A for environmental factor and M for mechanical factor.

This document provides an assessment of one or more of the three factors E, A and M by direct comparison with the baseline thermal classification established by T

Structure. Without a baseline, any analysis is limited.

At present, GB/T 20111 is planned to be composed of 6 parts.

--- Part 1.General requirements for low pressure. The purpose is to thermally evaluate electrical insulation systems for electrical products up to 1000V

General test procedures are proposed.

--- Part 2.Particular requirements for general models of scattered winding applications. The purpose is to specify the electrical products of 1000V and below.

Requirements for a generic model and a deep groove surrogate model for use in thermal assessment of electrical insulation systems.

--- Part 3.Particular requirements for encapsulated coil models Random wound winding electrical insulation system (EIS). The purpose is to specify 1000V

and the following requirements for encapsulated coil models used in the thermal assessment of electrical insulation systems for electrical products.

--- Part 4.Guidelines for selection of test methods for evaluating and classifying electrical insulation systems. The purpose is to provide electrical

Provide reference guidance for the selection of test methods for thermal evaluation and classification of insulation systems.

--- Part 5.Applications with a design life of 5000h and below. The purpose is to provide electrical products with a design life of 5000h and below

Establish simplified test procedures for thermal evaluation of electrical insulation systems used.

--- Part 6.Multifactorial assessment of increased factors in diagnostic tests. Designed for multi-factor thermal evaluation of electrical insulation systems

Establish test protocols for adding multiple factors during diagnostic testing.

Code for Thermal Evaluation of Electrical Insulation Systems Part 6.

Multifactorial assessment of increased factors in diagnostic tests

1 Scope

This document specifies a multi-factor evaluation procedure for adding factors to diagnostic tests for thermal evaluation of electrical insulation systems (EIS). increase factor

Examples (of factors other than heat) are as follows.

--- Strong vibration;

--- immersed in oil, water or solution;

--- The test voltage is higher than the test voltage of the reference EIS;

--- Strong cold shock.

Note. Increasing the factor refers to introducing a new impact factor or enhancing the factor on the basis of the existing impact factor.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document.

Note. GB/T 20111.1-2015 Regulations for Thermal Assessment of Electrical Insulation Systems Part 1.General Requirements for Low Voltage (IEC 61857-1.2008, IDT)

IEC /T R61857-2 Code of Conduct for Thermal Evaluation of Electrical Insulation Systems Part 2.Test Methods for Evaluation and Classification of Electrical Insulation Systems

Note. GB/T 20111.4-2017 Regulations for Thermal Evaluation of Electrical Insulation Systems Part 4.Guide to Selection of Test Methods for Evaluation and Classification of Electrical Insulation Systems

then (IEC /T R61857-2.2015, MOD)

IEC 61858-2 Electrical Insulation Systems Thermal Assessment of Graded Electrical Insulation Systems (EIS) Component Adjustment Part 2.

Note. GB/T 20139.2-2017 Electrical Insulation System - Electrical Insulation System (EIS) Thermal Evaluation of Component Adjustment for Graded Electrical Insulation Systems - Part 2.Forming

Winding EIS (IEC 61858-2.2014, IDT)

3 Terms and Definitions

Terms and definitions defined in IEC 61857-1 and the following apply to this document.

ISO and IEC maintain terminology databases for standardization at the following addresses.

3.1

Baseline Pending EIS baselinecandidateEIS

The EIS of the thermal evaluation test under the same conditions as the benchmark EIS.