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Technical requirements for insulation monitoring of low voltage power supply systems in power plants and substations

电力厂站低压用电系统的绝缘监测技术要求

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

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1 Scope

GB/T 45119-2024 sets the technical requirements for insulation monitoring in the low voltage systems of power plants and substations. Those systems are unearthed on purpose: an IT system keeps running through a first earth fault instead of tripping, which is exactly what is wanted for the auxiliaries and the DC supplies a station depends on. The price of that choice is that the first fault is invisible unless something watches for it, and a second fault on another phase is a short circuit. This document specifies what that watching device has to do: the requirements on the insulation monitoring device and on the fault location system, the measurement principle and the accuracy, the response time, the alarm thresholds and the behaviour on alarm, the requirements on the coupling to the system and the effect of system capacitance, the immunity and environmental requirements, the interfaces to the station monitoring system, and the test methods. For a station designer, an operator or a supplier of insulation monitoring equipment in China, this is the specification.

This document specifies the basic requirements, monitoring requirements, installation acceptance and operation and maintenance of low-voltage power systems in power plants and stations. Require. This document is applicable to the design, selection and installation of insulation monitoring of low voltage AC and DC power systems in power projects such as power plants, substations and converter stations. and use.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 2423.1-2008 Environmental testing for electric and electronic products Part

3 Terms and definitions

The terms and definitions defined in GB/T 2900.1, GB/T 2900.33, GB/T 4365 and the following apply to this document.

3.1 Insulation monitoring insulationmonitoring Monitor and measure the insulation condition of busbars and branches to ground in low voltage AC and DC power supply systems.