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**Guide for theoretical calculation of distribution network line
loss**

配电网线损理论计算导则

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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 for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Guidelines for the Theoretical Calculation of Line Losses in Distribution Networks

1 Scope

This document specifies the general requirements for the theoretical calculation of distribution network line losses, describes the theoretical calculation of power loss of distribution network components, 110kV and The following are theoretical calculations of distribution network line losses, summary of theoretical distribution network line loss electricity, and calculation methods of theoretical line loss rate.

This document is applicable to the theoretical calculation of line losses in distribution networks of 110kV and below.

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.

DL/T 686-2018 Guidelines for Calculating Power Losses in Power Grids DL/T 1365-2014 Terminology and Glossary of Electricity Energy Conservation DL/T 5729-2023 Technical Guidelines for Distribution Network Planning and Design

3 Terms and Definitions

For the purposes of this document, the terms and definitions defined in DL/T 1365-2014 and DL/T 686-2018 and the following apply.

3.1 distribution network

Receives electrical energy from the power source (transmission grid, power generation facilities, etc.) and distributes it to various users locally or step by step through distribution facilities. network.

Note. 110kV~35kV power grid is a high-voltage distribution network, 10kV (20kV, 6kV) power grid is a medium-voltage distribution network, and 380V (220V) power grid is a low-voltage distribution network.

[Source. DL/T 5729-2023, 2.0.1, with modifications]

3.2

A component of a system or device that cannot be divided into smaller parts without losing its specific function.

A group of devices or equipment that needs to be further refined and considered as a whole.

Note. Such as a power line, a power transformer, a group of reactors, etc.

3.3 [Source. DL/T 1365-2014, 5.7.1.21, modified]

The energy loss in the process of power transmission in the power grid occurs in various links such as transmission, transformation, distribution and consumption.

3.4 [Source. DL/T 1365-2014, 5.7.1.23, modified]

According to the parameters of power grid equipment, operation mode, flow distribution and load conditions, apply existing laws, theorems and rules to the power grid and its energy consumption.

Calculation of electrical energy losses by components.