National Standard for Relay Protection Design

Article Overview

DL/T 317-2025 is the current national standard in China for relay protection design, emphasizing dualized configurations, intelligent substations, and standardized protection device modeling.

Overview

The DL/T 317-2025 "Standardized Design Specification for Relay Protection Equipment" was issued by the National Energy Administration on June 30, 2025, replacing the 2010 edition. It establishes technical principles and design criteria for relay protection devices and circuits in power grids of 220 kV and above, covering lines, transformers, high-voltage shunt reactors, busbars, and bus-coupler sections . The standard reflects the trend toward digital and intelligent substations, incorporating merging units, intelligent terminals, SV sampling, and GOOSE communication.

Key Features

1. Dualized Configuration The standard emphasizes complete independence of dual protection sets, including CT/PT secondary windings, DC power sources, tripping coils, and communication channels. This ensures that a single fault does not compromise protection, enhancing grid N-2 reliability. For example, line pilot protection uses dual fiber optic channels with independent power sources and interface equipment . 2. Intelligent Station Device Modeling DL/T 317-2025 specifies modeling requirements...

Article Content

ANSI device numbers

It may surprise some to learn that this standard—or more accurately its AIEE predecessor—is one of the oldest IEEE standards in

IEC 60255 1xx: Protection relay functional standards for all

In short, standards in the new IEC 60255-1xx series are relevant and important for everyone whose work involves relay

IEEE Std C37.90 -2005, IEEE Standard for Relays and Relay Systems ...

This standard specifies standard service conditions, standard ratings, performance requirements, and testing requirements for relays

(PDF) IEC 60255 1xx: Protection relay functional standards for all ...

The new protection relay functional standards are designated as the IEC 60255-1xx series. The standardisation of

Microsoft Word

IEEE Power System Relay Collection: VuSpecTM Power system relaying standards concentrate on the application, design,

C37.90.1-2024

This standard specifies design tests for relays, relay systems, and control devices used for the protection and control of electric

C37.113-2015

Information on the concepts of protection of ac transmission lines is presented in this guide. Applications of the

Practical handbook-for-relay-protection-engineers | PDF

It covers standard codes, wiring practices, and norms for protecting generators, transformers, and lines, and provides detailed

Practical handbook for relay protection engineers | EEP

Relay protection circuitry This handbook covers the code of practice in protection circuitry including standard lead and

Societal and technology trend report

The crisis of traditional relay protection: A disruption of the technological paradigm Using the high short-circuit currents and system

Practical handbook-for-relay-protection-engineers | PDF

The handbook for protection engineers includes guidelines on protective circuitry, protective relay principles, and testing procedures

SCHEMATIC REPRESENTATION OF POWER SYSTEM RELAYING

Working Group Assignment Report on common practices in the representation of protection and control relaying. The

doi: 10.1007/978-3-319-20919-7_3

Verify by simulation that the relays operate as expected. Model malfunctioning of the protective equipment and verify operation of the

IEC 60255-1:2022

This document covers the main technologies in use today; other emerging technologies present specific EMC and safety issues but

Protection Relay

In the design of electrical power systems, the ANSI Standard Device Numbers denote what features a protective

Transformer Protection Application Guide

Transformer Protection Application Guide This guide focuses primarily on application of protective relays for the protection of power

ANSI Standards for Protection Relays

Protection Relay - ANSI Standards _ EEP - Free download as PDF File (.pdf), Text File (.txt) or read online for free.

ANSI device numbers

In electric power systems and industrial automation, ANSI Device Numbers can be used to identify equipment and devices in a

IEEE PSRCC and IEC Standards for Protective Relays

TC 95 Functional Standards Type-testing standards to show relays work correctly in their application situations – assure proper

IEEE Guide for Protective Relay Applications to Transmission Lines

The impact of different electrical parameters and system performance considerations on the selection of relays and protection

Power System Protective Relays: Principles & Practices

Abstract: Protective relays and devices have been developed over 100 years ago to provide “last line” of defense for the electrical

PC37.113/D3.5, Sept 2024

PC37.113/D3.5, Sept 2024 - IEEE Draft Guide for Protective Relay Applications to Transmission Lines Scope: Concepts and

Protective Relay Basics

Traditionally, protective relays were electromechanical devices utilizing induction disk, coils, contacts, and solenoid elements to

Protective Relaying Philosophy and Design Guidelines

This document supplements PJM Manual 07 which contains the minimum design standards and requirements for the protection

Fundamentals of Modern Protective Relaying

A primary motor protective element of the motor protection relay is the thermal overload element and this is accomplished through

PC37.90/D1, Sept 2024

Purpose: This standard establishes a common reproducible basis for validating designs and testing for the service conditions,

IEC 60255-1:2022

All measuring relays and protection equipment used for protection within the power system environment are covered by this

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