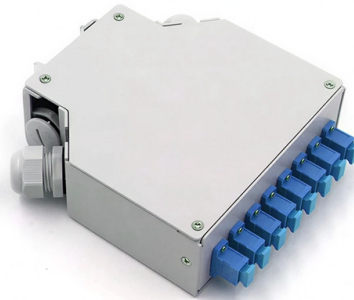


Principle of Successive Operation of Relay Protection



Summary of Content

Successive operation of relay protection refers to the coordinated sequence in which protective relays operate, ensuring that the relay closest to a fault acts first, followed by upstream relays if the fault persists.

Concept Overview

In power systems, successive operation is a key principle of relay coordination. Protective relays are arranged so that the relay nearest to the fault location operates first, isolating only the affected section. If the fault is not cleared by the first relay, the next relay in the upstream sequence operates after a predetermined time delay. This ensures selectivity, minimizing the area of power interruption and maintaining system stability .

Time Grading and Relay Coordination

Successive operation is typically implemented using time-graded protection:

- Definite time relays operate after a fixed time delay, regardless of fault current magnitude.
- Inverse time relays operate faster for higher fault currents, allowing quicker isolation of severe faults while maintaining coordination with upstream relays . The time delays are carefully calculated to provide a safety margin, ensuring that downstream relays have sufficient time to clear the fault before upstream relays act. This margin accounts for factors like current transformer saturation, DC components, and auxiliary relay delays .

Article Content

Distribution Automation Handbook

The measuring principle ensures that the relay operates exclusively on faults inside the area of protection, which means that the

Power System Protective Relays: Principles & Practices

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

Protective Relay : Working, Types, Circuit & Its Applications

A protective relay is used to protect the device once the fault is detected within a system. Once the fault is detected, the fault location

Protective Relaying

The protective relays act only after an abnormal or intolerable condition has occurred, with sufficient indication to

Protective Relay: Working, Types, and Applications

Learn about protective relays, their working principle, types, and applications in power systems. Discover how relays

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

Protection Relays Explained: Types, Working Principle

In this guide, we'll explore what protection relays are, how they're classified, the types available, and how they work with instrument

Protective Relaying Principles and Applications

Bus protection through differential relaying provides dependable fault clearance within complex switching arrangements, and

Protective Relay: Working Principles, Types, and Key Applications

Learn about protective relays, their working principles, types, and applications in safeguarding electrical power

Protective Relays: Types, Working Principle & Uses

Learn how protective relays detect faults, trip breakers, coordinate protection zones, and protect feeders,

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