Optimization Measures for Handling Defects in Relay Protection



Overview

This study introduces a new diagnostic framework that combines improved particle swarm optimization, K-means clustering algorithms, support vector machine (SVM), and learning vector quantization neural networks to provide a comprehensive fault diagnosis and pre-diction model. This study introduces a new diagnostic framework that combines improved particle swarm optimization, K-means clustering algorithms, support vector machine (SVM), and learning vector quantization neural networks to provide a comprehensive fault diagnosis and pre-diction model. Then, due to the particularity of historical statistical data, a weight calculation method combining analytical hierarchy process (AHP) and entropy weight method is adopted to eliminate subjective factors in the weight calculation process. Meanwhile, the equipment operation risk level was. Ensuring the operational reliability of substation relay protection systems through rapid defect diagnosis and state assessment is crucial for maintaining power system stability. This study introduces a new diagnostic framework that combines improved particle swarm optimization, K-means clustering.

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Article Content

Optimization of Multi level Relay Protection Adaptive ...

To improve the reliability and sensitivity of multi-level relay protection in distribution networks with distributed power sources, this study designs an adaptive setting strategy optimization method.

Strategy for evaluating the status of relay protection ...

The new generation of intelligent substations has achieved online monitoring functions for secondary equipment, making some state variables of relay protection equipment become

Design of an adaptive identification method for faulty operating states ...

To address the high complexity and diversity of faults in relay protection devices, as well as the challenges in fault feature extraction that affect fault identification accuracy, an adaptive

Research on the analysis method of power system relay protection

The experimental results show that this method can effectively analyze the operation characteristics of power system relay protection, and can accurately check whether the relay

Intelligent diagnosis method of relay protection defects based on ...

Defect diagnosis takes a long time, which leads to a long time exit of protection during defect. The existing intelligent defect diagnosis methods are carried out on a case-by-case basis, which limits the

A state evaluation and fault diagnosis strategy for substation relay ...

This study suggests a method for diagnosing defects and eval-uating the relay protection system in light of the aforementioned concerns. The method is founded on the K-means cluster-ing

A Knowledge Base and System based on Relay Protection Defect

In response to the needs of defect handling in relay protection and skills training for new employees, a knowledge base was designed based on defect handling and maintenance methods in relay protection.

OPTIMIZING AUTOMATED RELAY SETTINGS: A COMPARATIVE

This paper proposes an overcurrent (OC) protection coordination strategy that considers both directional and non-directional relays, evaluated through simulation-based methods.

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A state evaluation and fault diagnosis strategy for substation relay ...

This study introduces a new diagnostic framework that combines improved particle swarm optimization, K-means clustering algorithms, support vector machine (SVM), and learning

A quality evaluation method for the unstructured defect record of relay ...

In details, first, the problems existing in the unstructured defect records of RPDs are presented. Secondly, the corresponding evaluation indicators are proposed, and the quantitative

Strategy for evaluating the status of relay protection equipment for ...

Based on this, this paper proposes a novel relay protection equipment status evaluation strategy. Firstly, considering the fuzziness and uncertainty of the boundary division of relay protection evaluation

Fault Diagnosis Method of Relay Protection Based on Expert Rule ...

At present, the diagnosis of relay protection faults still relies on personnel on-site inspection, and the application of online monitoring information and alarm information of relay

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An Evaluation Method to the Record Text for the Defects of the Relay ...

Abstract The original record data for the defect of the relay protection devices (RPDs) collected on site is and may contain problems influencing the data mining, and it is lack of quantitative evaluation. This

Research on the analysis method of power system relay protection

The action characteristics of power system relay protection devices can well analyze whether the relevant actions are correct. An analysis method of relay protection action characteristics

Relay Maintenance and Testing

Ensure optimum system performance, efficiency, and safety with preventive relay maintenance and testing Today''s challenges in relay maintenance and testing are many. Due to rapid advancements

Societal and technology trend report

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The crisis of traditional relay protection: A disruption of the technological paradigm Using the high short-circuit currents and system inertia provided by synchronous generators, traditional relay protection

Data Dependence Analysis for Defects Data of Relay Protection

Currently, a large amount of defect data in relay protection devices (RPDs) is accumulated in operation. However, the defect data dependence analysis is absence and thus it could not meet

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