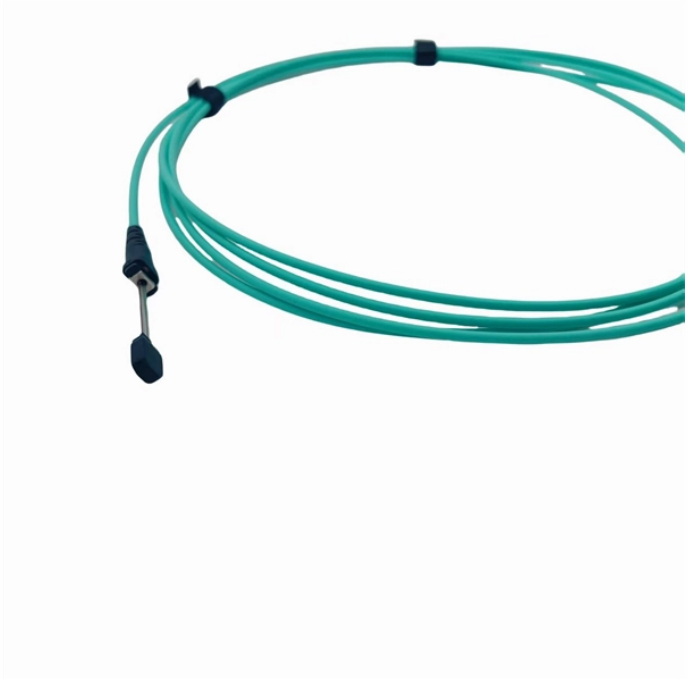
Indicators of Relay Protection Reliability



Overview

According to the requirements of the “four characteristics” of relay protection (i., reliability, selectivity, sensitivity, and speed), once there is a fault within the power grid, it is necessary to accurately, quickly, and effectively limit it to the minimum range to avoid the. As a critical component of the present day power system, a few studies have been conducted on the optimization and future prediction for quality reliability of relay protection devices during their production stage of intelligent testing. Therefore, in this study, a Markov model of multimodal. 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. The quantitative assessment attempt of reliability indicators for the specific digital structure of the relay protection system by analogy with an assessment of similar digital systems in other industries is given in this work. The. of electromechanical, solid-state, and digital relays. Specific system quality measurements include relay misoperations; relay failures to operate; relay delayed operations; and accessory component failure, such as fault

recorder, t ip circuit, communications system, or targeting system.

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The reliable operation of the relay protection device is crucial for ensuring the safety and stability of the power system. Quantitative evaluation of protectio.

Abstract—The main reasons for false (incorrect) triggering of microprocessor relay-protection systems are analyzed. Methods of increasing the reliability indicators of relay-automated systems are ...

When it comes to relay protection systems, creating representative indicators that accurately reflect the characteristics of a fault can improve the effectiveness of analysing fault data ...

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

mance measures that can be evaluated for system impact. Using 18 months of data (January 1996–August 1997), detailing every relay operation on an anonymous utility system (1400 ...

	Secondly, the corresponding evaluation indicators are proposed, and the quantitative calculation method for each indicator is given in combination with the knowledge graph for the ...
	The comprehensive availability of the two-layer state space system of relay protection devices developed in this paper is verified to be credible for predicting the quality and reliability of future relay ...
	In the course of the study, numerical values of the following reliability indicators of relay protection and automation devices were determined: the failure rate and the frequency of...
	Analytical lower and upper bounds of reliability and three methods of reliability approximation are provided to evaluate the reliability of electromagnetic relays.
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