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继电保护、通信及自动化

大电流接地系统线路高阻接地距离继电器

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摘要： 极化电压、工作电压和电压平面上的动作特性称为距离继电器的三要素。这3个要素中极化电压为第一要素，最理想的极化电压是故障前的工作电压，目前继电器常采用正序极化电压，当低阻接地短路时两者几乎无差异，但是高阻接地短路时两者的差异则不能容忍。采用记忆和非故障相推算的方法，获得故障相故障前的工作电压，并以此作为极化量构成高阻接地距离继电器。理论分析和仿真结果均表明，基于电压平面的距离继电器比基于阻抗平面的距离继电器的性能更加优良。

关键词： 高阻接地 距离继电器 电压平面 极化电压 工作电压 阻抗平面 纯电流选相

High Resistance Grounded Distance Relay in Solidly Earthed System

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Abstract: The three elements of distance relay in the voltage plane are the polarization voltage, operation voltage and operation characteristic, among which the polarization voltage is the most important. The relay could ideally select pre-fault voltage as polarization voltage, while it practically employs the positive sequence voltage. The difference between the two kinds of polarization voltage is negligible in the case of low impedance ground fault, while significant in the case of high impedance ground fault. Thus, this paper uses the memory and the non-fault phase parameters to gain the pre-fault voltage, and use it as the new polarization voltage. Thus it puts forward a new self-adaptive high impedance ground distance relay. The theoretical analysis and simulation result show that the performance of the distance relay based on the voltage plane is better than that based on the impedance plane.

Keywords: high resistance grounded distance relay voltage plane polarization voltage operation voltage impedance plane selecting phase with current

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