

自动化

含T接线互感线路参数带电测量方法及工程应用

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摘要:

提出一种含T接线互感线路的零序阻抗参数带电测量新方法。详细介绍了该带电测量方法的原理与数学模型, 给出了带电测量时互感线路的运行方式。获取测量源与利用全球卫星定位系统(GPS)作为异地测量的同步信号是2个关键技术。文中给出了带电测量装置的构成以及数字仿真结果。最后介绍了利用新方法对广东中山电网2条110 kV含T接线互感线路的零序阻抗参数进行带电测量的情况, 给出了带电测量结果, 并与干扰法测量值以及经验估算值进行了对比。数字仿真结果与实测结果均表明该带电测量方法是可行的, 测量结果准确, 完全能满足工程测量要求。

关键词:

A New Method for Live Line Measurement of Zero-Sequence Parameters of Transmission Line Containing T-Connection Transmission Line With Mutual Inductance and Its Engineering Application

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Abstract:

A new method for live line measurement of zero-sequence parameters for transmission line containing T-connection line with mutual inductance is proposed. The principle and mathematical model of the proposed method are presented in detail, and the operation mode of transmission line with mutual inductance during live line measurement is given. There are two key techniques in the proposed method, i.e., to acquire the zero-sequence current to be measured and to use Global Positioning System (GPS) as the synchronous signal for the measurement carried out at different place simultaneously. In this paper, the composition of live line measuring device and digital simulation results are given. Finally, the live line measurement process of two 110 kV transmission line containing T-connection lines with mutual inductance, which belong to Zhongshan power network in Guangdong province, China, by the proposed method are described, the live line measurement results are given and compared with the measured results by interference method and the value from empirical estimation. Results from both simulation and on-site live line measurement show that the proposed live line measurement method is feasible, and its measurement accuracy can satisfactorily meet the requirements of engineering measurement.

Keywords:

收稿日期 2009-06-14 修回日期 2009-07-27 网络版发布日期 2010-04-14

DOI:

基金项目:

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