

自动化

基于过热区域搜索的多电源复杂配电网故障定位方法

梅念 石东源 段献忠

华中科技大学 电气与电子工程学院, 湖北省 武汉市 430074

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摘要

对基于过热弧搜索的配电网故障定位方法进行了多方面分析, 讨论了其不足之处。在此基础上提出基于过热区域搜索的多电源复杂配电网故障定位新方法。通过判断区域故障以及引入顶点对弧的负荷和区域负荷, 给出简便的最小配电区域分离算法, 并详细论述了过热区域的搜索步骤; 同时对馈线测控终端故障信息不完备的情况给出了相应对策。算例分析表明, 新方法推理简单, 容错性好, 且可精确衡量故障的程度, 具有较高的实用价值。

关键词

[配电网; 故障定位; 过热弧; 过热区域; 特殊开关; 不完备信息](#)

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A Fault Location Algorithm for Complex Multi-Source Distribution Networks Based on Over-Heated Region Searching

MEI Nian SHI Dong-yuan DUAN Xian-zhong

School of Electrical and Electronic Engineering, Huazhong University of Science and Technology, Wuhan 430074, Hubei Province, China

Abstract

The distribution network fault location method based on over-heated arc is analyzed in various aspects, and its deficiencies are reviewed. On this basis, an over-heated region searching based new fault location method for complex multi-source distribution network is proposed. By means of estimating the faulty section of the over-heated region instead of the over-heated arc as well as introducing of the vertex-to-arc load and regional load, a concise algorithm to separate minimum distribution region is given and the searching steps of over-heated region are discoursed upon in detail. Meanwhile, for the incomplete fault information of feeder's measurement and control terminal, the solution is provided by ignoring the node with unknown information. Analysis result of calculation example shows that the proposed method possesses good fault tolerance and is suitable to multi-source distribution networks with various special switches, its reasoning is simple as well as the fault degree can be accurately scaled, so the proposed method is available.

Key words

[distribution networks; fault location; over-heated arc; over-heated region; special switches; incomplete information](#)

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通讯作者 梅念 meinn@126.com

作者个人主页 梅念 石东源 段献忠

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