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电力系统

配电网故障可观测的实现及馈线终端单元配置方法

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摘要：

定义了配电网的树形结构，确定了树形结构的存储方法及实现故障可观测的流程。建立了馈线终端单元(feeder terminal unit，FTU)优化配置模型，明确了FTU配置数目、布点位置对故障可观测的影响，并通过遗传算法求解FTU优化配置方案。配电网故障可观测及合理配置FTU可降低故障定位及隔离给用户带来的停电风险，IEEE 33节点仿真算例验证了文中模型及方法的有效性。

关键词：

Realization of Fault Observability of Distribution System and Corresponding Optimal Configuration Method of Feeder Terminal Units

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Abstract:

The fault observability of distribution system and corresponding optimal configuration method of feeder terminal units (FTUs) are researched. Using tree structure model, the storage approach and the flowchart to implement fault observability is determined, and an optimal configuration model of FTUs is built and the optimal configuration scheme of FTUs is solved by genetic algorithm (GA); the numbers of FTUs to be configured and the positions to position FTUs are clear and definite. Fault observability and rational configuration of FTUs can reduce the risks to consumers due to fault location and fault isolation. The effectiveness of the proposed model and method is verified by simulation results of IEEE 33-bus system.

Keywords:

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