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Power Distribution Loss Reduction Using Cuckoo Search (Conference Paper)

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Abstract

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The distribution system has the most portion power loss compared to the transmission and generation systems. One of the effective methods to reduce the power loss in the system is by reconfiguring the existing network. In distribution system, there are two types of switches, which are sectionalizing switches and tie-switches. Reconfiguration process changes the status of those switches until the objective is achieved. In this study, the reconfiguration method is proposed for distribution system using the Cuckoo Search Algorithm (CSA) method. The system used is a standard IEEE 33-bus radial distribution system. The main objective is to reduce the power loss in the system while satisfying the distribution constraints. The proposed method is used to give an optimal configuration of distribution network for power loss reduction and its validity is done by comparing it with Particle Swarm Optimization (PSO). © 2018 IEEE.

SciVal Topic Prominence

Topic: Electric power distribution | Distributed power generation | feeder reconfiguration

Prominence percentile: 96.500

Author keywords

Cuckoo search algorithm | Network reconfiguration | Power distribution loss reduction

Indexed keywords

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Engineering uncontrolled terms: Cuckoo search algorithms | Distribution systems | Network re-configuration | Power distributions | Power loss reduction | Radial distribution systems | Reconfiguration process | Sectionalizing switch

Engineering main heading: Particle swarm optimization (PSO)

Funding details

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