Method based on genetic algorithm to reconfiguration of distribution networks to reduce energy losses

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Abstract:

Reconfiguration of distribution networks means changing network configurations by changing the normally open and normally closed switches in the network with a variety of purposes including loss reduction, load balancing, improve voltage profile, or a combination of these occurs. Reconfiguration takes place on both daily and seasonal time horizon. Most of the studies in this field have been focusing on power loss. Given the importance of energy losses from an economic perspective, this paper presents a method for the reconfiguration season radial distribution networks, with the aim of reducing energy losses can be developed. Due to the current approach of the electricity industry and the expected increase in the presence of distributed generation (DG) in distribution network, distribution network reconfiguration in the presence of DG are study. The propose models solved by using genetic algorithm and its efficient implementation on a 32-bus test network is investigated. The results suggest the importance of choosing the objective function and show its effectiveness.

keywords : Distribution Network Reconfiguration , Energy losses , Genetic Algorithm , Distributed Generation

[DOR: 20.1001.1.23222468.1391.1.3.5.1]
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Journal of Novel Researches on Electrical Power - Vol. 1-No. 3- winter 2012