عنوان مقاله:
A Novel Method for Location and Capacity Optimization of DGs Based on GA/IWD

محل انتشار:
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خلاصه مقاله:
Distributed generation (DG) into an electric radial distribution network has an overall positive impact on the system. The power injections from renewable DG sources located close to the load centers provide a chance for system power loss reduction, cost reduction; voltage profile improvement; voltage stability improvement; environmental friendliness, postponement system upgrading and increasing reliability. The intelligent water drops (IWD) algorithm is a new swarm based optimization algorithm inspired by observing natural water drops flowing in rivers. In this paper, a novel combined Genetic Algorithm (GA) / Intelligent Water Drops (IWD) is presented for optimal location and sizing of DG on distribution systems. The objective is to minimize network power losses, better voltage regulation and improve the voltage stability within the framework of system operation and security constraints in radial distribution systems. A detailed performance analysis is carried out on 33 bus system to demonstrate the effectiveness of the proposed methodology.

کلمات کلیدی:
Distributed generation, Intelligent Water Drops, Genetic algorithm, Allocation, Voltage stability index

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