عنوان مقاله:

Congestion Management through Optimal Allocation of FACTS Devices Using DigSILENT-Based DPSO Algorithm- A Real Case Study

محل انتشار:

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خلاصه مقاله:

Flexible AC Transmission Systems (FACTS) devices have shown satisfactory performance in alleviating the problems of electrical transmission systems. Optimal FACTS allocation problem, which includes finding optimal type and location of these devices, have been widely studied by researchers for improving variety of power system technical parameters. In this paper, a DIgSILENT-based Discrete Particle Swarm Optimization (DPSO) algorithm is employed to manage the power flow, alleviate the congestion, and improve the voltage profile in a real case study. The DPSO have been programmed in DPL environment of DIgSILENT software and applied to the power grid of Gilan Regional Electric Company (GilREC), located in north of Iran. The conducted approach is a user-friendly decision making tool for the engineers of power networks as it is executed in DIgSILENT software which is widely used in electric companies for the power system studies. The simulation results demonstrate the effectiveness of the presented method in improving technical parameters of the test system through several case studies.

کلمات کلیدی:

FACTS devices allocation, Congestion management, FACTS devices, DPSO algorithm, DIgSILENT

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