

Optimal Placement of Optimal Unified Power Flow Controller Using Genetic Algorithm

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Abstract:

In this paper a new placement method for optimal unified power flow controller in power systems by using genetic algorithm is introduced. The considered cost-based optimal power flow (OPF) in power systems is applied to decrease the costs of operation. Optimal placement of OUPFCs is formulated in multi-objective functions by applying OUPFC's power injection model. The proposed method is utilized in 30-bus IEEE network. Simulation results show considerable mitigation on total cost of power system.

Keywords: Optimal Placement, Optimal Unified Power Flow controller, Genetic Algorithm, Cost Function