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Optimal Allocation of Distributed Generation Sources for Loss Reduction and Voltage Profile Improvement by Using Particle Swarm Optimization

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Abstract : Nowadays distributed generation integration is best way to overcome the increasing load demand. Optimal allocation of distributed generation plays a vital role in reducing system losses and improves voltage profile. In this paper, a Meta heuristic technique is proposed for allocation of DG in order to reduce power losses and improve voltage profile. The proposed technique is based on Multi Objective Particle Swarm optimization. Fewer control parameters are needed in this algorithm. Modification is made in search space of PSO. The effectiveness of proposed technique is tested on IEEE 33 bus test system. Single DG as well as multiple DG scenario is adopted for proposed method. Proposed method is more effective as compared to other Meta heuristic techniques and gives better results regarding system losses and voltage profile.

Keywords : Distributed generation (DG), Multi Objective Particle Swarm Optimization (MOPSO), particle swarm optimization (PSO), IEEE standard Test System
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