

عنوان مقاله:

Cost-based optimal distributed generation planning with considering voltage depended loads and power factor of DG

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خلاصه مقاله:

If determination of location and size of Distributed Generation (DG) are applied accurately, the DG's ability will improve the network situation and reduce operation costs. In this paper, various market conditions are considered to maximize the benefit of DG's presence and make a trade off among advantages of DG, network situation, and Distribution Company (DISCO) owners. To determine the optimal location and size of DG, two methods of the cost minimization and the nodal pricing are combined. In addition to evaluating the impact of parameters such as variation of energy price and load on objective function, effect of these parameters on location and size of DG is considered. To confirm the results, impact of loads which are dependent on voltage and variation of the power factor of the DG units is applied and then Effect of power factor on optimal location and size of DG is shown. A method is proposed for convergence of different results which is caused by different power factors. To observe long-term impact of the DG's presence in the network, a load growth for five years is considered annually. Study is carried out on IEEE-30 bus test circuit

کلمات کلیدی:

Optimization, Babak Yousefi-khangah, en, Voltage Depended Loads, Saeed Abapour, DG Placement and Sizing, Shahram Yousefi-khangah, Loss reduction, Department of Electrical Power Engineering, Power Factor of DG, Faculty of Electrical and Computer Engineering, University of Tabriz, Tabriz, Iran

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