عنوان مقاله:

Active & Reactive Power Compensation in Distribution Systems Using a Novel Method

محل انتشار:

نویسندگان:

ramin borjali navesi - *Department of Electrical Engineering, Technical and Vocational University(TUV),Urmia, Iran*

behnam alizadeh - *Ministry of Education, khoy Department of Education, khoy, Iran*

خلاصه مقاله:

A wide range of solution methodologies have been proposed in literature for the siting and sizing of active and reactive power sources in radial distribution systems. The solution techniques are mainly classified as mathematical programming algorithms, heuristics, meta-heuristic methods, and the analytical ones. This paper proposes a novel analytical method for optimal allocation of active and reactive power sources, i.e. distributed generation (DG) and capacitor banks. The conducted approach is very simple and lacks the complications of other methods. Based on some analytical calculation, two main formulations are derived. Then, the resulting formulations are used to site and size capacitor and DG in ۳۳-bus distribution network to verify its performance by comparing the obtained results with those of global search method. Then, the proposed method is used to allocate specified number of DG and capacitor on ۳۳ and ۶۹-bus systems. Finally, the conducted approach is employed to allocate multiple DGs and capacitors, and also multiple DGs with optimal power factor on ۱۱۹-bus distribution network. The simulation results demonstrate that the presented analytical approach is very strong in finding the optimal results, very fast and simple, and applicable to large distribution systems.

کلمات کلیدی:
compensation, DG, Capacitor, Novel Method

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1767037