عنوان مقاله:

Integration of Distributed Generation in Simultaneous Expansion Planning of Subtransmission Lines and Substations

محل انتشار:

سیزدهمین کنفرانس دانشجویی مهندسی برق ایران (سال: 1389)

تعداد صفحات اصل مقاله: 10

نویسندگان:

Amir Bagheri - *Zanjan University*

Hesameddin Yousefian - *Tafresh University*

Morteza Beigli - *Zanjan University*

خلاصه مقاله:

In this paper simultaneous expansion planning of subtransmission lines and substations is implemented. The proposed approach is capable of introducing the candidate substations with regards to distribution network using the modified mathematical clustering algorithm (MMCA). The presence of Distributed Generation (DG), as an alternative for supplying the load of subtransmission system, has been considered in the problem. The presented method simultaneously gives the optimal location and capacity of substations, the optimal allocation of the load points to the substations, optimal subtransmission lines expansion, optimal location and size of DG units and also the optimal power generation of DGs in different levels of the annual Load Duration Curve (LDC). The objectives of the problem and its constraints compose an optimization problem where the Genetic Algorithm (GA) and Linear Programming (LP) are employed to solve it. The effectiveness of the proposed method is demonstrated by its application on a typical subtransmission system, and the results are compared with the expansion planning of the same system without the use of distributed generation.

کلمات کلیدی:

Simultaneous expansion planning;distributed generation; genetic algorithm; linearprogramming; modified mathematical clustering algorithm; subtransmission system

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/99203