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عنوان مقاله:

DESIGN AND IMPLEMENTATION OF NETWORK PLANNING SYSTEMS

محل انتشار:

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نویسنده:

,Sadegheih - *Department of Industrial Engineering University of Yazd*

خلاصه مقاله:

In this paper, system network planning expansion is formulated for mixed-integer programming, a genetic algorithm and tabu search. Compared with other optimisation methods, GA's are suitable for traversing large search spaces since they can do this relatively rapidly and because the use of mutation diverts the method away from local minima, which will tend to become more common as the search space increases in size. GA's give an excellent trade-off between solution quality and computing time and flexibility for taking into account specific constraints in real situations. TS has emerged as a new, highly efficient, search paradigm for finding quality solutions to combinatorial problems. It is characterised by gathering knowledge during the search, and subsequently profiting from this knowledge. The attractiveness of the technique comes from its ability to escape local optimality. The cost function of this problem consists of the capital investment cost in discrete form, the cost of transmission losses and the power generation costs. The DC load flow equations for the network are embedded in the constraints of the mathematical model to avoid sub-optimal solutions that can arise if the enforcement of such constraints is done in an indirect way. The solution of the model gives the best line additions, and also provides information regarding the optimal generation at each generation point. This method of solution is demonstrated on the expansion of a 10 bus-bar system to 18 .busbars

کلمات کلیدی:

System Planning, Tabu Search, Genetic Algorithm, Mathematical Programming, Artificial Intelligence, Iterative Improvement Methods

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