

Multiobjective Economic Dispatch Using Optimal Weighting Method

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Abstract : The purpose of economic load dispatch is to allocate the required load demand between the available generation units such that the cost of operation is minimized. It is an optimization problem to find the most economical schedule of the generating units while satisfying load demand and operational constraints. The multiobjective optimization problem in which the engineer's goal is to maximize or minimize not a single objective function but several objective functions simultaneously. The purpose of multiobjective problems in the mathematical programming framework is to optimize the different objective functions. Many approaches and methods have been proposed in recent years to solve multiobjective optimization problems. Weighting method has been applied to convert multiobjective optimization problems into scalar optimization. MATLAB 7.10 has been used to write the code for the complete algorithm with the help of genetic algorithm (GA). The validity of the proposed method has been demonstrated on a three-unit power system.

Keywords : economic load dispatch, genetic algorithm, generating units, multiobjective optimization, weighting method

Conference Title : ICEE 2020 : International Conference on Electrical Engineering

Conference Location : Montreal, Canada

Conference Dates : May 18-19, 2020