

Optimal loading analysis with penalty factors for generators using brute force method

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Abstract

Optimal load dispatching is an important challenge for modern electric and computational engineering. Considering different linear and nonlinear constraints optimal load analysis is done to predict the utility and operating duration of the different power stations. This paper reports the optimal loading analysis method using the Brute Force method with and without considering the penalty factor of power line loss. In this work, two different algorithms are discussed with their mathematical explanation and analyzing feasibility. The algorithms are designed and analyzed in Matlab 2018a. Several conditions are examined by the proposed algorithms and the yields are explained with numerical and graphical presentation. The results prove the effectiveness of the proposed algorithms. Furthermore, the pros and cons of the proposed methods are also discussed in this work.

Keywords

Optimal loading analysis; Parallel operation of generator; Penalty factor; Brute force method

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