ECONOMIC LOAD DISPATCH USING PARTICLE SWARM OPTIMIZATION

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Abstract

Economic Load Dispatch (ELD) is one of an important optimization tasks which provides an economic condition for a power systems. In this paper, Particle Swarm Optimization (PSO) as an effective and reliable evolutionary based approach has been proposed to solve the constraint economic load dispatch problem. The proposed method is able to determine, the output power generation for all of the power generation units, so that the total constraint cost function is minimized. In this paper, a piecewise quadratic function is used to show the fuel cost equation of each generation units. The feasibility of the proposed method to show the performance of this method to solve and manage a constraint problems is demonstrated in 2 power system test case, consisting 13 and 15 generation units with neglected losses. These results prove that the proposed method is capable of getting higher quality solution including mathematical simplicity, fast convergence, and robustness to solve hard optimization problems.