UNIVERSITI TEKNOLOGI MARA

GENERATION AND RESERVE DISPATCH IN A COMPETITIVE MARKET USING CONSTRAINED PARTICLE SWARM OPTMIZATION

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ABSTRACT

In modern energy management system, maintaining an economical, secure and reliable generation scheduling is an important operation problem. Competitive bidding for energy and ancillary services are gradually more known as an important part of electricity market. Additionally, the transmission capacity limit must be considered in optimizing the total market cost. In this study, an approach based on constrained particle swarm optimization (PSO) is developed to cope with the generation and reserve, and multi-area electricity market dispatch problem. The PSO method proposes a solution for optimizing the total cost in a multi-area competitive market considering the system constraints. A test system consisting of six generation unit is tested by using the proposed method.

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