QUANTUM-INSPIRED ARTIFICIAL IMMUNE SYSTEM (QIAIS) FOR OPTIMAL LOAD SHEDDING TECHNIQUE FOR LOSS MINIMIZATION

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ABSTRACT

In power system restructuring, losses occur in generation and transmission may caused high cost to consumers. So that the optimum load shedding techniques are developed in order to reduce the losses thus minimize the consumer's costs. In order to solve this problem, a several techniques had been developed to optimum the load shedding. Besides that, Quantum-Inspired Artificial Immune System optimization technique is an approach for optimal load shedding in distribution system. QIAIS is a combination of Artificial Immune System and the Quantum Inspired techniques. The concept of AIS is taken from the study of human body immune system which contains several mechanisms for defense against pathogenic organisms. This research represented that QIAIS optimization technique had a better performance compared to single AIS optimization technique. QIAIS optimization had a minima total losses and a better computation time. An IEEE 30-bus system is used in this study.

Keywords:

Loss minimization, Load Shedding (LS), Artificial Immune System (AIS), Quantum Inspired Artificial Immune System (QIAIS)

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