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(57) Abstract :
This work brings out the computational method to establish the optimal distribution by reconfiguration of network with incorporation of a novel Grey Wolf Optimization (GWO) algorithm to minimize the power loss in a radial network in a distribution system. The method aims to minimize the power loss and get enhanced voltage magnitude with satisfying the operating constraints described by the different operating conditions. The distribution network reconfiguration (DNR) problem is classified as a multimodal and highly nonlinear under various direct and indirect restrictions. The constraint violations have been properly handled to obtain a characteristic of stable convergence, and high-quality solutions in a minimum execution time. The 33-bus and 69-bus systems are used to analyze for optimum reconfiguration by incorporating the developed algorithm. The simulation results obtained are collated with the outcome of renowned optimization techniques, confirming the efficacy of the GWO algorithm for the DNR problem.

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