Solution of the capacitor allocation problem using an improved whale optimization algorithm

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Abstract

A superior optimization technique called whale optimization algorithm introduced in 2016 which belongs to swarm intelligence family is used and implemented in this paper with some improvements to solve the problem of capacitor allocation in radial distribution feeders. In order to show the effectiveness of the proposed technique, three test distribution feeders are used (15 bus, 34 bus and 69 bus test systems). The obtained results are compared with other optimization techniques prove that the proposed method gives the optimal results; most reduction in system power losses, voltage profile enhancement and lower annual cost among the other techniques applied to the same distribution feeders.

International Journal of Engineering, Science and Technology 2018, October

Future University In Egypt (http://www.fue.edu.eg)

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