World Academy of Science, Engineering and Technology
International Journal of Energy and Power Engineering
Vol:13, No:05, 2019

Loss Minimization by Distributed Generation Allocation in Radial Distribution System Using Crow Search Algorithm

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Abstract : This paper presents an optimal allocation and sizing of Distributed Generation (DG) in Radial Distribution Network (RDN) for total power loss minimization and enhances the voltage profile of the system. The two main important part of this study first is to find optimal allocation and second is optimum size of DG. The locations of DGs are identified by Analytical expressions and crow search algorithm has been employed to determine the optimum size of DG. In this study, the DG has been placed on single and multiple allocations.CSA is a meta-heuristic algorithm inspired by the intelligent behavior of the crows. Crows stores their excess food in different locations and memorizes those locations to retrieve it when it is needed. They follow each other to do thievery to obtain better food source. This analysis is tested on IEEE 33 bus and IEEE 69 bus under MATLAB environment and the results are compared with existing methods.

Keywords : analytical expression, distributed generation, crow search algorithm, power loss, voltage profile
Conference Title : ICEPES 2019 : International Conference on Electric Power and Energy Systems
Conference Location : Sydney, Australia
Conference Dates : May 16-17, 2019