This paper illustrates successful identification of optimal location of STATCOM (Static Synchronous Compensator) on various test transmission networks using evolutionary algorithms namely PSO (Particle Swarm Optimization), BFO (Bacterial Foraging Optimization) and Plant Growth Optimization techniques. STATCOM device is one of the shunt compensation devices available and is expected to improve the voltage profile significantly. However transmission losses also have to be kept in mind, in this paper objective function was taken as transmission loss minimization. By identifying the STATCOM location with minimum transmission loss in the network it is possible to have a network with healthy voltage profile and less transmission loss resulting increase in network efficiency. The results obtained by different evolutionary algorithms were found to be same, hence validating the results.

References

Optimal Location of STATCOM on Transmission Network using Evolutionary Algorithms

Index Terms

Computer Science  Control Systems

Keywords

Load Flow Analysis  Pso  Bfo  Plant Growth Optimization  Statcom