ALLOCATION AND SIZING OF DISTRIBUTED GENERATION (DG) USING MULTI VERSE OPTIMIZER (MVO)

Nori Elfahmi Darwis[1*], Nor Rul Hasma Abdullah[2*], Ibrahim Haruna Shanono[2,3], Mahfuzah Mustafa[2], Rosdiyana Samad[2]

[1]College of Engineering, Universiti Malaysia Pahang 26000 Pekan Pahang
[2]Faculty of Electrical & Electronic Engineering Technology, Universiti Malaysia Pahang
[3]Electrical Engineering Department, Faculty of Engineering Technology, Bayero University Kano
noryelfahmi97@gmail.com,hasma@ump.edu.my

Keywords: DISTRIBUTED GENERATION, MULTI-VERSE OPTIMIZATION, OPTIMIZATION, LOSSES

Abstract

Minimizing power loss in a distribution system is considered one of the most challenging areas of study. Losses are more significant in the distribution rather than in the transmission system. The electrical infrastructure has created an opportunity for numerous engineering innovations, consisting of Distributed Generation (DG), to obtain optimal benefit. The parameters like the size as well as the most desired location has to be taken into consideration to minimize it. This article centres on identifying the optimum placement and sizing of DG to decrease the losses in the system using Multi-Verse Optimization (MVO) technique. The total power loss equation is considered the objective-function for the development technique and can reduce the total losses of the system. The effectiveness of the proposed method was validated on the standard IEEE 30-bus Reliability Test System (RTS).