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OPTIMAL ALLOCATION AND CONTINGENCY ANALYSIS WITH MULTIPLE EMBEDDED GENERATION UNITS IN RADIAL DISTRIBUTION NETWORK USING GA

KOTA SHIRISHA REDDY, L. RAMADEVI, G. SRAVANTHI & KOGANTI SRI LAKSHMI

Assistant Professor, Department of EEE, SNIST, Hyderabad, Telangana, India

ABSTRACT

The integration of embedded generation (EG) units into the distribution system brings technical and economic benefits to the power system network. But, placement of EG's at non optimized locations can effect voltage profile with increased system losses. This paper intends the optimal placement and contingency analysis of several Embedded Generation (EG) units in distribution network using Genetic Algorithm (GA). The main intention is to diminish the total real power losses with proper voltage profile. It go behinds the conversation of evaluating the effect of the location and the size of EG to the system before and after contingency is created in the system by fault. The projected allocation method and contingency analysis is verified using IEEE-33 and 69 bus radial distribution systems. The algorithm has been programmed in MATLAB and results are compared.

KEYWORDS: Genetic Algorithm (GA), Embedded Generation (EG), Contingency Analysis