Optimum shunt capacitor placement in distribution system—A review and comparative study

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ABSTRACT

Shunt capacitors are commonly used in distribution system for reactive power compensation. Different analytical, numerical programming, heuristic and artificial intelligent based techniques have been proposed in the literature for optimum shunt capacitor bank (SCB) placement. This paper will present a very detailed overview of optimum SCB placement techniques. Six different approaches of optimum SCB placement based on minimization of power losses, weakest voltage bus approach and maximization of system loadability will be applied on four different radial distribution test systems. The results will be compared on the basis of power loss reduction, voltage profile improvement, system loadability maximization and the line limit constraint.

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