# SIMULATED ANNEALING FOR FEEDER ROUTING OF RADIAL DISTRIBUTION SYSTEM

**PRIYA JHA[1], S. VIDYASAGAR[2] & DEEPAK SHARMA[3]**

[1,3]PG Student, SRM University, Chennai, India

[2]Assistant Professor, SRM University, Chennai, India

## ABSTRACT

The main objective of the distribution system planning is to determine the substation location, size and its service area, number of feeders and their routes. The planning problem is solved by classical methods to non traditional soft computing techniques, hence in this work, soft computing technique known as Simulated Annealing is used. Simulated Annealing is a thermal process for obtaining low energy states of a solid in a heat bath. The process contains two steps. Firstly increase the temperature of the heat bath to a maximum value at which the solid melts. Secondly, decrease carefully the temperature of the heat bath until the particles arrange themselves in the ground state of the solid. With this optimization procedure, the objective of the work, to minimize the total annual cost is obtained. The total annual cost includes the capital recovery, energy loss and interruption costs. The feasibility of proposed algorithm is applied on 25 nodes distribution network.

**KEYWORDS:** Simulated Annealing, Feeder Routing, Distribution System Planning, and Power Flow