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AN EFFICIENT LOAD FLOW BASED RADIAL DISTRIBUTION CONDUCTOR SELECTION

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Abstract

Optimal conductor selection is an important aspect in distribution system planning. Conductor selected depends upon the power loss through the feeder segments. Power loss through the feeder and voltage at each node are determined from the load–flow. Conductor for each branch is selected as per the minimization of the objective function. Objective function includes the cost of total branch loss and the cost of capital investments. This paper reports a novel method of optimal conductor selection for a radial distribution network based on a load–flow and minimum objective cost function presented in Tram and Wall (1988). Conductor voltage is set to be within the prescribed limit and conductor current within maximum current carrying capacity of conductors.

Keywords: Optimal conductor, objective function, radial.