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Abstract

Distribution system (DS) delivers electrical power to the end users and is the first interface of the utility with the consumers. Distribution system contributes the highest power loss due to its operation in low voltage level. Due to deregulation and competition, distribution utilities are under pressure to minimize operation cost by reducing losses and to improve reliability to enhance the overall performance. The distribution system is reconfigured for the purpose of loss minimization, load balancing on the feeders, relieving overloads, maintenance etc. , it also

affects voltage profile, reliability, power factor, etc. In each configuration (switching combinations), these parameters are affected (changed) and these alternatives are available for the decision makers (DM). Multi-attribute decision-making (MADM) is the well-known branch of decision making which deals with decision problems through a number of qualitative and quantitative criteria. In this paper different MADM methods SAW, WPM, TOPSIS and PROMETHEE are proposed for finding the compromised best radial configuration by considering loss minimization, reliability indices etc. from available alternatives and results are compared.

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Computer Science

Index Terms

Distributive System

Keywords

Distribution System Reconfiguration Loss Minimization Multi-attribute Decision Making

Saw

Wpm

Topsis

Promethee