

ABSTRACT

Power flow analysis is very important for distribution systems. Likewise for radial distribution systems. One solution to simplify analyzing radial distribution systems is to make an application that is expected to help the process of power flow analysis. The application is tested by comparing the results of the power flow analysis using the Matlab GUI application with the results of power flow analysis using the ETAP application. As for several factors that influence the radial distribution system, including digital computing-based power algorithms such as the fast decoupled method, Newton Raphson and Gauss Seidel. These methods cannot always be used for calculations in radial distribution systems that have a high R / X ratio. Therefore in this final project the Network Topology method is used. This Network Topology method is effective computation in each iteration, and the solutions and numerical calculations are correct. By using the Network Topology method, the simulation will approach the real conditions as in the field. This final project can be used to evaluate the flow of power on a radial distribution network system. The final result is the voltage and active power losses and reactive power. The results of the power flow analysis in the IEEE 33 Bus system get an error at a voltage of 0.0025224% and power losses of 202,700kW and 135,142kVAR. Because it uses a radial distribution network, so the power losses on the network are calculated to be greater when compared to the loop distribution system. So it is necessary to do conditioning to be able to improve the operating efficiency of the system.

Keywords: Power Flow, Radial Distribution System, Network Method Topology.

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