ABSTRACT

MODELING AND ANALYSIS OF THREE-PHASE POWER FLOW UNBALANCED USING NEWTON RAPHSON METHOD

By

Adi Saputra

Electricity needs in Indonesia continues to increase along with the economic and industrial growth and population growth also. Electrical energy is a form of energy which is very commonly used by the community. In the process of distribution of electrical energy sometimes a case of imbalance occurs, and this cannot be ignored. Imbalance occurs due to an unbalanced load, untransposed transmission lines generate non-symmetrical impedance.

Therefore, it is necessary to analyze the unbalance that occurs in the power systems by developing a form of three-phase power flow modeling which is combined by the equations of Carson Method, Newton Raphson Method and symmetrical components as a method that is proposed in this paper.

From the research that has been done, the result between the three-phase power flow method approach produced output to commercial software Digsilent Power Factory 14.0.520, as a comparison software, both on the state of balanced load or unbalanced load.

Keywords: *Carson Method, Symmetrical Components, Newton Raphson Method, Unbalanced.*