

ABSTRACT

This study aims to create a computer program to evaluate the ability of plants based on load flow analysis on Power Systems. MATLAB programming using Newton's method in solving flow-Rhapson load to evaluate the ability of each generating unit at the electric power system be the main focus of this study.

The result showed that, MATLAB programs can be used to analyze the ability of plants through power flow simulation with the method of Newton-Rhapson. The number of iterations to reach convergence is 2 – 8 iterations with an average power mismatch is 0.000698579.

Based on the results of the power flow analysis, found that the status of the backup power system until 2017 Gorontalo is a deficit with massive power deficit ranging between 2.91 MW – 24.5 MW.

Keywords: *load flow, generating ability, Newton-Rhapson, MATLAB*

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