ABSTRACT

OPTIMIZATION POWER FLOW USING UNIFIED POWER FLOW CONTROL (UPFC) IN LINE TRANSMISSION 150 KV REGIONAL LAMPUNG

By

EZI HAILI ANANTA

Transmission network is an important part in power systems to deliver electrical energy from generator plants to load centers, therefore the power system should be pursued to the fullest in order to achieve optimal power flow, meaning that the achievement of conditions voltage requirements and minimal power loss.

In this research, the simulation of power flow optimization using the Unified Power Flow Control (UPFC). UPFC can control the power flow on transmission by adjusting the parameters that affect of power flow to achieve optimal power flow.

The result showed that the installation of UPFC for optimal power flow are generating between bus 3 (Bukit Kemuning) and bus 4 (Kotabumi) with a control injection voltage (r) of 0.1 pu and phase angle 300^0 (Deg). Obtained a total reduce losses of active power 49.33% and reactive power 49.20% and increase the voltage at bus 4 is 2.66%.

Key words : FACTS, UPFC, Power Flow, Optimization Power Flow.