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REGULATION OF POWER FLOW BY UNIFIED POWER FLOW CONTROLLER IN IEEE 14 BUS SYSTEM

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ABSTRACT

The unified power flow controller (UPFC) is one of the real time control flexible alternating current transmission systems (FACTS) device in a power system network. The UPFC is providing multi functional flexibility, connected by DC link, consisting of shunt converter and series converter. The objective of this paper is to use voltage source model of UPFC which can be incorporated in power flow algorithm to study its effect for power flow control in the line and bus in a power system network. The proposed model in order to increase voltage level and power transfer is tested on 14 bus test system. Programming is done with the help of MATLAB to check the functioning of UPFC. The results of power system network with and without using UPFC are compared in terms of active and reactive power flows in the line and active and reactive power flows at the bus to analyze the performance of UPFC.

KEYWORDS: Active Power, Power Flow Algorithm, Unified Power Flow Controller

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