

IMPROVEMENT OF POWER QUALITY IN AN A INDUCTION GENERATOR BASED WIND POWER GENERATING SYSTEM CONNECTED TO GRID BY USING UPFC

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ABSTRACT

This paper study about power quality improvement of the wind energy system connected to grid. For the power quality improvement we used UPFC. UPFC is a versatile FACTS (Flexible AC Transmission Systems) device that is the most sophisticated and complex power electronics equipment and has emerged for control and optimization of power flow and also to regulate the voltage in the electrical power transmission system. This project propose the real, reactive power and voltage control through a transmission line by placing UPFC at the sending end using MATLAB simulation. The control scheme has the fast dynamic response and hence is adequate for improving transient behavior of power system after transient conditions. When no UPFC is installed, real and reactive power through the transmission line cannot be regulated. A control system which enables the UPFC to follow the changes in reference values like AC voltage, DC voltage and angle order of the series voltage source converter is simulated. In this control system, a generalized pulse width modulation technique is used to generate firing pulses for both the converters. Simulations will be carried out using MATLAB/SIMULINK software to check the performance of UPFC.

KEYWORDS: FACTS, Reactive Power, Real Power UPFC