POWER FACTOR CORRECTION USING SHUNT COMPENSATION

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ABSTRACT

This paper discusses the Static VAR Compensation (SVC) method as an effective solution for power factor improvement. The need for power factor correction arises to regulate the system voltage and reactive power flow in an electrical system. A MATLAB/GUI model is developed to determine the amount of Var and capacitance required to compensate the power factor and voltage variations occurring under different loading conditions in an Electrical Machines Laboratory. Also to demonstrate the power factor correction using shunt compensation, a MATLAB/SIMULINK model is developed. The various forms of shunt compensation methods like fixed compensation and SVC are implemented and the results are analyzed for the systems without and with shunt compensation.

KEYWORDS: Fixed Capacitors, Power Factor, Reactive Power Compensation, SVC, Thyristor Switched Capacitor, Thyristor Controlled Reactor