

POWER QUALITY AND VOLTAGE STABILITY OF TRANSMISSION LINE USING STATCOM AND SSSC

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ABSTRACT

Last two decades, power demand has increased substantially while the expansion of power generation and transmission has been severely limited due to limited resources and environmental conditions. Some transmission lines are heavily loaded and the system stability becomes a poor. Steady state and transient problems in a power system have undesirable consequences on the system. The main objective of this paper is a comparative investigation in enhancement of voltage stability via static synchronous series compensator (SSSC) and static synchronous shunt compensator (STATCOM) externally controlled by a POD controller. The new designed P.O.D controller is very efficient for voltage stability and power system stability under transient conditions. This paper discusses and demonstrates the comparison between the STATCOM with P.O.D controller and SSSC with P.O.D controller, to power system for effectively regulating system voltage for different types of faulted condition. Simulation results show that STATCOM with POD controller is more effective to enhance the voltage stability and power system stability and increase transmission capacity in a power system.

KEYWORDS: FACTS, SSSC, STATCOM, POD Controller