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Design of Static Var Compensator Model for Long Transmission Line

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Abstract: *In general, transmission lines were operated at very unbalanced conditions in power systems. Some lines were operated at overloaded conditions at all times, pushing them closer to their stability limitations. This is a result of the rising energy demand and concurrent economic restrictions placed on the generation of electricity. Additionally for stability purposes, the transmission lines' power flow must be restricted. Voltage stability is one of the most difficult studies and even with tried- and-true methods and technology for enhancing power system security, this challenge still requires extra work to ensure the stability of the system. One approach being examined to address issues with power system stability is the use of flexible AC transmission system (FACTS) devices. In this paper, comparative study of a 66kV system consisting of 400 km long transmission line under various load conditions and their voltage profile improvement using shunt compensation type of FACTS known as Static VAr compensator (SVC) is demonstrated using MATLAB SIMULINK software.*

Keywords: FACTS, FC-TCR, Static VAr Compensator, modelling.

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