

STATCOM's Contribution to the Improvement of Voltage Plan and Power Flow in an Electrical Transmission Network

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Abstract : Flexible Alternative Current Systems Transmission (FACTS) are used since nearly four decades and present very good dynamic performances. The purpose of this work is to study the behavior of a system where Static Compensator (STATCOM) is located at the midpoint of a transmission line which is the idea of the project functioning in disturbed modes with various levels of load. The studied model and starting from the analysis of various alternatives will lead to the checking of the aptitude of the STATCOM to maintain the voltage plan and to improve the power flow in electro-energetic system which is the east region of Algerian 400 kV transmission network. The steady state performance of STATCOM's controller is analyzed through computer simulations with Matlab/Simulink program. The simulation results have demonstrated that STATCOM can be effectively applied in power transmission systems to solve the problems of poor dynamic performance and voltage regulation.

Keywords : STATCOM, reactive power, power flow, voltage plan, Algerian network

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