

Simulation of a Three-Phase Multilevel Unified Power Flow Controller UPFC.

ABSTRACT

This work deals with the study and simulation of Unified Power Flow Control (UPFC) at its normal and abnormal conditions. The systems are modeled and simulated using MATLAB software. Shunt inverter or Static Compensator (STATCOM) is modeled as a 3-phase multipulse converter and the series inverter or SSSC has been constructed as a 3-phase, 3-level multilevel converter. Faults are set to the system to observe the operation of STATCOM and phase shift, ϕ of the SSSC is varied to observe the operation of SSSC. Simulations are carried out and the results obtained agreed with the theory of operation of the UPFC.