Abstract

Power system engineers are currently facing challenges to increase the power transfer capabilities of existing transmission system. This is where the Flexible AC Transmission Systems (FACTS) technology comes into effect. With relatively low investment, compared to new transmission or generation facilities, the FACTS technology allows the industries to better utilize the existing transmission and generation reserves, while enhancing the power system performance. Moreover, the current trend of deregulated electricity market also favors the FACTS controllers in many ways. FACTS controllers in the deregulated electricity market allow the system to be used in more flexible way with increase in various stability margins. FACTS controllers are products of FACTS technology; a group of power electronics controllers
expected to revolutionize the power transmission and distribution system in many ways. In this paper an overview to the general types of FACTS controllers is given along with the simulation of TCSC FACTS controller using SIMULINK. Analysis of the simulated TCSC shows similar functions as a physical one. Objective of the whole work is to control the power flow in the transmission line. This can be achieved by knowing the various parameters which are involved in power flow in the transmission line

References

- A. Ally, B. S Rigby, "An Investigation into the Impact of a Thyristor Controlled Series Capacitor-Based Closed Loop Power Flow Controller under Fault Conditions", IEEE AFRICON 2004
- Xiaobo Tan, Luyuan Tong, "Characteristics and Firing angle control of Thyristor Controlled Series Compensation installations", IEEE Conf 1998, pages 672-676

Index Terms

Computer Science
Control Systems
Keywords
Facts  Power System  Stability  Transient Stability  Transient Stability Limit  Voltage
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