ENHANCEMENT OF POWER FLOW USING TCSC CONTROLLER

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ABSTRACT

Flexible AC Transmission systems (FACTS) technology plays a vital role as Power system engineers are currently facing challenges to increase the power transfer capabilities of existing transmission system. Instead of erecting a 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. With FACTS technology the FACTS controllers are evolved; a group of power electronics controllers expected to revolutionize the power transmission and distribution system in many ways. The FACTS controllers clearly enhance power system performance, improve quality of supply and also provide an optimal utilization of the existing resources. Thyristor Controlled Series Compensator (TCSC) is a key FACTS controller and is widely recognized as an effective and economical means to enhance power system stability. In this paper TCSC-FACTS general type controller using MATLAB-SIMULINK simulation is given which can be used for practical network and the effect of the TCSC parameter variations over the system performance is studied.

KEYWORDS: Index Terms-- Facts, Facts Controller, Thermal Rating, Transient Stability Limit, Voltage Stability.