Setting TCSC and SVC Using Extreme Learning Machine (ELM) to Improve Voltage Stability Under Contingency

Name : Khoirul Anam
NRP : 2210 105 079
Advisor : Dr.Eng. Rony Seto Wibowo, ST., MT.
           Prof. Ir. Ontoseno Penangsang, M.Sc, Ph.D.

ABSTRACT

Flexible AC Transmission System (FACTS) devices are equipment used to control the flow of power as it can adjust the transmission line impedance and provide reactive power compensation installed at a particular bus. FACTS devices can maintain the stability of voltage during a contingency (loss of transmission line due to interference). The type of FACTS devices are implemented on the IEEE 14 bus system is the TCSC (Thyristor Controlled Series Capacitor) and SVC (Static Var Compensator). By adjusting the settings of TCSC and SVC on the appropriate in the event of a contingency to improve the voltage stability index. In the Final Project is about the design of controller with the method of Extreme Learning Machine (ELM) is applied to the TCSC and SVC. The controller functions to respond interference quickly and able to give a precise and accurate setting of the TCSC and SVC so that this equipment can work optimally match the required system. Setting the appropriate to TCSC and SVC will be able to increase the stability of the voltage so that the system can work optimally while in a state of contingency.

Keywords : Extreme Learning Machine (ELM), Voltage stability, TCSC, SVC
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