Transient Stability Simulation System with TCSC Including Wind Farm

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Description
Wind power is the most reliable and developed renewable energy sources over past decades. It has a performance of the rapid penetration in the power system. It is very essential to analyze the transient stability of grid connected doubly fed induction generators (DFIG) in wind power generating systems. This paper presents the improvement of transient stability simulation of power system including wind farm. Various mathematical models, including the detailed generator models as well as the one-mass and two-mass shaft system models, are presented in this paper. Based on the different system models, the dynamic behaviors are simulated by using Matlab/Simulink, under the condition that the machine synchronous is subjected to a three-phase short-circuit fault. In addition the FACTS such us TCSC is modeled and compared by simulation for different system at the various operation conditions. The models and …