عنوان مقاله:

Voltage and Frequency Stabilization of a Grid-Connected Wind Farm with Squirrel-Cage Induction Generator Using STATCOM and ESS

محل انتشار:

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خلاصه مقاله:

Since wind energy resources, intrinsically have irregular and accidental characteristics, they have a significant impact on problems such as voltage and frequency stability, system reliability, and so on when connected to the grid. In this paper, the static synchronous compensator (STATCOM), a combination of a 48-pulsevoltage source converter(VSC) and phase-shifting transformers, is employed to reduce voltage fluctuations. The combination of STATCOM and energy storage system (ESS) is used under various scenarios, including interference wind blow, fault occurrence, and tower shadow and gradient effects. The results show a reduction in the grid voltage and active power fluctuations and thus an improvement in transient stability of the power grid.

کلمات کلیدی:

Energy storage system, Interference wind, Squirrel-cage induction generator, STATCOM, Wind turbine.