

عنوان مقاله:

A Stochastic Reliability-based Approach for Reserve Provision in Systems with High Wind Power Penetration

محل انتشار:

بیست و هشتمین کنفرانس بین المللی برق (سال: 1392)

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خلاصه مقاله:

Wind is one of the most forms of renewable energies that take into consideration due to its environmentally friendly in recent years. The most important problem in the operation of wind power is its intermittence nature that could poses technical and economic challenge. A challenge now facing utilities is how to adjust reserves to mitigate the effect of wind forecast uncertainties. Provision of specified amount of reserve could ensure a high level of reliability to the system. This paper presents a two-stage stochastic programming model for provision of reserves in a power system with significant penetration of wind power. Finally, a comprehensive analysis is performed from both economical and reliability viewpoints. The proposed method is solved by mixed integer linear programming. Numerical studies on the six bus test system show the effectiveness of the proposed method

کلمات کلیدی:

Reserve requirements, short-term reliability, stochastic programming, wind power

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