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新能源与分布式发电

基于普通异步发电机和双馈风力发电机静态数学模型的系统静态电压稳定性研究

张瑞明，张新燕

新疆大学 电气工程学院，新疆维吾尔族自治区 乌鲁木齐市 830047

摘要：

基于普通异步发电机和双馈风力发电机模型对风电场接入系统的静态电压进行分析，通过对新疆某地区电网进行仿真计算，绘制了采用不同风力发电技术时风电场公共接入点、地区电网电压中枢点、重要变电站的PV曲线，分析了风电场接入系统的电压变化、静态稳定极限和裕度变化。根据仿真结果可以得出，系统弱节点处的静态电压极限值较低，由双馈风电机组构成的风电场的静态电压较由普通异步风电机组构成的风电场更稳定。

关键词：

Sutdy on Static Voltage Stability of Power System Based on Static Models of Common and Double-Fed Asynchronous Generators

ZHANG Ruiming, ZHANG Xinyan

School of Electrical Engineering, Xinjiang University, Urumqi 830047, Xinjiang Uygur Autonomous Region, China

Abstract:

The static voltage of power system connected with wind farms based on common and doubly fed asynchronous generator static models is analyzed. By means of simulating a certain regional power network located in Xinjiang Uygur Autonomous Region, the PV curves at point of common coupling, key buses and important substations are plotted; the variation of voltage, static stability limit and margin are analyzed while wind farm is connected to power system. It can be seen from simulation results that the static voltage limit at weak node is lower, and the static voltage of power system connected with wind farm composed by doubly fed induction generators is more stable than that connected with wind farm composed by wind turbines with common asynchronous generators.

Keywords:

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通讯作者: 张瑞明

作者简介:

作者Email: zhangruiming0704@sina.cn

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