

新能源与分布式发电

风力发电机供电路径解析分析

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摘要:

由于风能具有随机性和间歇性, 风力发电机组的输出功率随机波动, 电网调度困难。得到风电出力变化所引起的功率缺失的具体位置和传输路径, 及时调整运行方式, 对于维持系统稳定有着重大的意义。针对此问题, 基于电网络功率分布理论, 提出了一种快速搜索网络中风电源供电路径的解析方法, 以实现紧急调度。该方法主要思想是在传输等效前提下, 通过将含风电源网络分解成多个单电源并联传输网络, 确定风电源子网络。对于网络中任意2个节点之间的功率传递关系进行解析分析, 得到了风电源供电路径。

关键词:

Analytic Analysis on Power Supply Path of Wind Power Generation

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Abstract:

In view of the randomness and intermittence of wind energy, the output of wind power generators fluctuates randomly and it makes the dispatching of power network in trouble. In order to maintain power system stability, it is of significance to obtain the concrete position and supply path, where the power insufficiency due to output variation of wind power occurs, so that the operation mode of power network can be adjusted in time. In allusion to this problem, based on the theory of power distribution in power network an analytic method is proposed to rapidly search power supply path of wind farm in power network and to implement emergent dispatching. The main thinking of the proposed method is that: under the presupposition of ensure the equivalence of power transmission, by means of decomposing the power network containing wind farm into a parallel transmission network containing multi single power sources to determine the sub-network of wind farm. The analytic analysis on power-transferring relation between arbitrary two nodes in the sub-network is performed, thus the power supply path of wind farm is obtained.

Keywords:

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