新能源与分布式发电

异步风力发电机等值及其短路特性研究

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摘要：

研究了风电场联络线路接地故障时风电场提供的短路电流，从理论上分析了影响风电机组短路特性的主要因素。结合风电场风电机组的布置、接线情况将风电场等值为多台风电机组，利用Jensen模型计算等值风速，并以张家口某风电场为算例，验证了上述等值方法的合理性。针对风电场典型运行方式，以PSCAD/EMTDC为平台仿真研究了风电场投入运行的机组数、输出有功功率，故障类型、故障点对故障特性的影响，仿真结果与理论分析相吻合。

关键词：

Research on Equivalent Aggregation of Asynchronous Wind Power Generators and Its Short-Circuit Characteristic

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Abstract:

The short-circuit current supplied by wind farm during the earth fault occurred in tie-line connecting wind farm with power grid is researched, and the main factors influencing short-circuit characteristic of wind power generation set are analyzed theoretically. According to the configuration of wind farm and the wiring of wind power generators, a wind farm is equivalent to several wind power generators, then the equivalent wind speed is calculated by Jensen model, and taking a certain wind farm located in Zhangjiakou for the case, the reasonableness of above-mentioned equivalent method is verified. In allusion to typical operation modes of wind farm and taking PSCAD/EMTDC as the platform, the influences of number of being operated generators, active power output, fault types and the position where fault occurs on fault characteristic are researched, and simulation results conform to the results from theoretical analysis.

Keywords:

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