

新能源与分布式发电

考虑电缆故障情况下的海上风电场内部电气系统布局经济性研究

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摘要:

海上风电场内部电气系统布局方案是近年来研究的热点, 其中放射形布局目前应用的最经济的布局方案。本文从开关配置的角度对放射形布局的经济性进行研究, 在已有的传统开关配置方案基础上提出了开关完全配置方案和开关部分配置方案, 并在综合考虑了投资成本和故障机会成本(由于海底电缆故障所损失的应得发电收益)两个因素后对这三种开关配置方案的总成本进行评估。最后, 本文对影响总成本的几个重要参数进行了灵敏度分析。

关键词:

Economic Study on Internal Electrical Systems of Offshore Wind Farms with Consideration of Cable Outage

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Abstract:

Internal electrical system layouts of offshore wind farms have received a good deal of attention recently, in which the traditional radial design has the lowest investment cost. From the viewpoint of switchgear configuration, this paper proposes two new solutions—switchgear fully configuration and switchgear partly configuration based on the traditional switchgear configuration, and assesses the total cost of all the three configurations, considering the investment costs and the opportunity cost of failure (the lost income due to the submarine cable fault). At last the paper carries out a sensitivity analysis involving several important parameters.

Keywords:

收稿日期 2009-03-16 修回日期 2009-06-24 网络版发布日期 2010-02-11

DOI:

基金项目:

基金项目: 国家自然科学基金项目(50977050, 50823001)。

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