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电机电工

±800kV直流输电线路的导线选型研究

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摘要
分裂导线选择是发展特高压直流输电工程的关键技术之一，对±800kV直流输电线路的设计、保护环境和控制工程投资至关重要。采用国际公认的、经过实际工程验证且广泛使用的计算分析方法，研究了±800kV直流输电线路的结构参数(导线分裂数、子导线截面、导线分裂间距、极导线对地高度和极导线间距)对合成电场、离子流密度、可听噪声和无线电干扰场强的影响；对±800kV直流输电线路的电磁环境进行了预测分析。根据电磁环境限值、电磁环境预测分析结果等，确定了±800kV直流输电线路的导线结构。

关键词 特高压 直流线路 电磁环境 分裂导线

分类号 TM216

Design Consideration of Conductor Bundles of ±800kV DC Transmission Lines

Abstract
Design of Conductor Bundles is one of key technologies in developing UHV DC transmission project, which is very important for design of ±800kV DC transmission lines, environment protection and project investment control. Effects of structure parameters (such as the number of conductors in a bundle, cross-section of sub-conductor, conductor splitting spacing, conductor bundle height and pole spacing) of ±800kV DC transmission lines on the total electric field, the ion current density, the audible noise and the radio interference strength were researched by the internationally accepted and verified computation methods. Predicative analysis of the electromagnetic environment of ±800kV DC transmission lines was done. According to the limits of electromagnetic environment and results of predicative analysis on electromagnetic environment, conductor bundle structure of ±800kV DC transmission line was determined.

Key words ultra high voltage (UHV) DC transmission line electromagnetism environment conductor bundle

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