

35 kV架空送电线路防雷用并联间隙研究

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摘要

为解决35 kV架空送电线路的雷击问题, 提出采用并联间隙防雷保护方案, 分析了其保护原理, 设计了35 kV线路防雷用并联间隙的结构尺寸; 对并联间隙试品进行了大量的雷电冲击和工频电弧试验, 结果表明并联间隙能有效保护绝缘子串和导线免于雷击引起的工频续流电弧的烧蚀; 计算了带并联间隙线路的雷击跳闸率, 建议将3片绝缘子增加为4片, 加装并联间隙不会引起线路跳闸率增加。

关键词 [35 kV架空送电线路; 防雷保护; 并联间隙; 雷击跳闸率](#)

分类号

Study on Shunt Gap Lightning Protection for 35 kV Overhead Transmission Lines

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Abstract

To solve the faults caused by lightning stroke in 35kV overhead transmission lines, it is proposed to use shunt gap as the lightning protection. The protective principle of shunt gap is analyzed and the structure and structural sizes of shunt gaps for 35kV overhead transmission lines are designed. A lot of lightning impulse and power frequency arcing tests are performed with shunt gap test specimen, and test results show that shunt gap can effectively make insulator strings and wires exclusive from ablation of power frequency arc incurred by lightning stroke. The lightning trip-out rate of 35 kV overhead lines with shunt gap is calculated, on this basis the authors recommend that when shunt gaps are equipped in 35 kV transmission lines, in order to restrict the increase of the lightning trip-out rate the number of insulator pieces in a single string should be changed from original three pieces into four pieces.

Key words [35 kV overhead transmission lines; lightning protection; shunt gap; lightning trip-out rate](#)

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