

عنوان مقاله:

Adjusting the Electric Field and Voltage Distribution Along a 400 kV Transmission Line Composite Insulator Using Corona Ring

محل انتشار:

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خلاصه مقاله:

Nowadays, composite insulators are widely utilized in power systems because of their undeniably important advantages over non-ceramic insulators. Effective use of these insulators, however, entails adjusting the voltage and e-field distribution along them which are inherently much more non-linear comparing to non-ceramic insulators. In this paper, corona ring design for a 400kV composite insulator is investigated aiming at e-field and voltage regulation along the insulator. The analysis is based upon Finite Element Method (FEM) and the results obtained through the simulations. The effects of the corona ring's design parameters on e-field and voltage control are studied. Appropriate dimensions and position of the rings are then determined for effective adjustment of the voltage as well as e-field distribution. Moreover, the simulation is also conducted for double corona rings at the energized end and the results are compared to those in the case of single ring.

کلمات کلیدی:

;composite insulator; e-field; voltage distribution; corona ring

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