

An Investigation on Electric Field Distribution around 380 kV Transmission Line for Various Pylon Models

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Abstract : In this study, electric field distribution analyses for three pylon models are carried out by a Finite Element Method (FEM) based software. Analyses are performed in both stationary and time domains to observe instantaneous values along with the effective ones. Considering the results of the study, different line geometries is considerably affecting the magnitude and distribution of electric field although the line voltages are the same. Furthermore, it is observed that maximum values of instantaneous electric field obtained in time domain analysis are quite higher than the effective ones in stationary mode. In consequence, electric field distribution analyses should be individually made for each different line model and the limit exposure values or distances to residential buildings should be defined according to the results obtained.

Keywords : electric field, energy transmission line, finite element method, pylon

Conference Title : ICPESE 2015 : International Conference on Power and Energy Systems Engineering

Conference Location : Paris, France

Conference Dates : August 27-28, 2015