

Study of Ground Level Electric Field under 800 kV HVDC Unipolar Laboratory level Transmission line

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Abstract : Transmission of bulk power over a long distance through HVDC transmission lines is gaining importance. This is because the transfer of bulk power through HVDC, from generating stations to load centers over long distances is more economical. However, these HVDC transmission lines create environmental and interference effects under the right of way of the line due to the ionization of the surrounding atmosphere in the vicinity of HVDC lines. The measurement of ground-level electric field and ionic current density is essential for the evaluation of human effects due to electromagnetic interference of the HVDC transmission line. In this paper, experimental laboratory results of the ground-level electric field under the miniature model of 800 kV monopole HVDC line of length 8 meters are presented in lateral configuration with different heights of the conductor from the ground plane. The results are compared with the simulated test results obtained through Finite Element based software.

Keywords : bundle, conductor, hexagonal, transmission line, ground-level electric field

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