Corona Power Loss On Bundled Conductors: Experimental Andcomputational Results

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Summary

In this paper, the corona current and, hence, the corona power loss associated with bundle conductors is estimated by an iterative computational technique based on the finite-element and charge-simulation methods. The investigated bundled transmission lines consist of one, two, and three conductors. Variation of the corona power loss as a function of the number of conductors, conductors orientation, as well as the bundle spacing, is investigated. The contribution of each bundle conductor to the total corona power loss is also reported. A laboratory model was built to investigate the effectiveness of the iterative technique. It has been found that the computed results agree well with the experimental values