NUMERICAL EVALUATION OF THE ELECTRIC FIELD IN A COMPACT SWITCHGEAR OF MEDIUM VOLTAGE

ABSTRACT  Numerical evaluation of the electric field distribution in and around electric power devices can significantly facilitate their designing and redesigning processes. Such an approach is here applied to support the redesigning process of a gas insulated switchgear (GIS) of medium voltage. The electric field has been investigated with a professional software package Maxwell (Ansoft) that employs the finite element method (FEM). The obtained results enabled to determine points of the maximum electric field strength in the load-switch compartment of the considered GIS. These results indicate that the apparatus is oversized and its overall dimensions can be reduced.

Key words: compact switchgear, electric field, gaseous insulation, finite element method, load switch