

Backflashover analysis for 132 kV Kuala Krai-Gua Musang transmission line

ABSTRACT

Lightning has been a major concern to the power system researchers because it can cause damage to the connected electrical equipment and transmission failure. One study carried out is that where the level of voltage at a substation is observed following a backflashover analysis on a transmission line. Sample of worst case transmission line was taken from Tenaga Nasional Berhad, which is 132 kV Kuala Krai-Gua Musang line for the purpose of simulation using PSCAD software. An integral part of this study is the model of transmission line components such as insulator coordination gap flashover, tower model, nonlinear current dependent resistance as footing model. All models are verified by accurate analysis of previous researchers. Results were analyzed and influences of line parameters to backflashover rate were discussed. Practical recommendations and conclusions based on the results are made for an improvement in the lightning performance of high voltage transmission line.

Keyword: Backflashover analysis; Backflashover rate; Leader progression model; Lightning performance; PSCAD