

Hubert Janicki: Thyristor Surge Protection System – Application and Test Methods

Selected issues concerning overvoltage appearing in traction substations during switching off short circuits have been characterised in the theoretical part of the article . Some equipment working in the traction substation, its functions and importance for the proper functioning of 3 kV DC power supply system has been presented. The process of switching off short circuits by DC high-speed circuit-breakers, its consequences and threats that it poses for the electric power supply have been described. The practical part of the article includes experiences and test results obtained by the Electric Power Department of the Railway Research Institute. The new research equipment applied during the thyristor surge protection system's tests and then the implemented tests have been presented, i.e. the method and results. Descriptions of tests are complemented with relevant illustrations, figures or a short interpretation of obtained results.

Keywords: thyristor surge protection system, railway traction power supply, DC high-speed circuit-breaker, shortcircuit current