Fault Current Limiter in D.C. Networks Using Thyristor By-pass Circuits

H. Balan[*], Elena Stefan[*], T. Vaida[*], P. Karaisas[**]

[*]Technical University of Cluj-Napoca, The Faculty of Electrical Engineering, Power Systems Dept.,
Cluj-Napoca, Romania, e-mail: horia.balan@eps.utcluj.ro
[**]Tehnological Educational Institute Of Piraeus, Department of Electrical Engeering, Egaleo Athens, Greece,
e-mail: karaisas@teipir.gr

Abstract— This paper presents a method for limiting short-circuit current for d.c. systems. Classic methods for limiting short-circuit current are described as well as solid state devices used directly on current path and by-pass solutions. Thyristor and resonant circuit breaker version proposed by authors relieves current flow for every step during operation. Matlab simulation for these steps is useful for establish commutation periods for experimental model. This paper accentuate thyristor solid state breaker advantages comparative to other power solid state devices especially for high voltage.