

Abstract

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Optimal Design of SDBR of DFIG for Improved Dynamic Performance and LVRT Capability

Nowadays, wind power has been developed very fast in the world and the installed capacity of wind turbine has been increased rapidly. Doubly Fed Induction Generator (DFIG) has been applied very popularly for its many advantages. When the grid voltage dip occurs, a series dynamic braking resistor (SDBR) connected in series with the stator terminals is usually activated. In this paper the effect of activating the (SDBR), are studied and analyzed, beside the value and the effect of the resistance used in the SDBR control scheme was investigated, so the optimum resistance value was considered. SDBR is control to limit the voltage at the point of common coupling (PCC) in sake of improving the low voltage ride through (LVRT) capability. Also, a DC-Chopper resistance was added in sake of improving the DC-Link voltage. Simulation results based on MATLAB/SIMULINK are discussed.