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# A Novel of Flux coupling Type Superconducting Fault Current Limiter in DFIG Based Isolated Wind Energy system

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**Abstract:** Nowadays renewable energy based energy generation and distributed generation, conventional electric power system. A fault current limiter (FCL) appears as excellent solution to above mentioned problem by limiting the fault current level. The aim of socioeconomic research is the development of fault current limiter which has following features is improved performance in terms of current limitation, higher reliability and lifetime and reduced material requirement. Superconducting fault current limiter (SFCL) appears as an excellent FCL which tends to satisfy above features. There are various types of SFCLs are in development process in order to have better performance. Resistive type SFCL is being commercialized soon. In this paper, a novel of flux coupling type SFCL is designed for limiting the fault current in isolated wind turbine generation system. The SFCL consisted of the primary and secondary coils, which were wound in series each other through an iron core. The primary coil and secondary coil with serially connected superconducting unit were connected in parallel in a flux-lock type SFCL. The major benefit obtained by limiting fault current is that we can avoid the up-gradation of existing switch-gear, protective scheme and substation equipment such as circuit breaker (CB). The whole research work and analysis has been carried out in MATLAB/SIMULINK environment.

**Key words:** Fault current limiter, Flux coupling SFCL, Wind, Resistive SFCL, Superconducting fault current limiter.

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