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Analysis on Fault Current Limiting and Recovery Characteristics of Three-Phase Transformer Type SFCL using Two SMs between Secondary Windings

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Three-phase transformer type superconducting fault current limiter (SFCL) using two superconducting module (SM)s between secondary windings, which consisted of three-phase transformer windings wound on three legs of E-I iron core and two SMs connected between secondary windings, were suggested and its fault current limiting fault current limiting and recovery characteristics using double quench of two SMs were analyzed. To verify the effective fault current limiting operation of three-phase transformer type SFCL using two SMs between secondary windings, the unsymmetrical ground and the symmetrical ground faults were applied into three-phase power simulated system with the suggested SFCL. Additionally, to analyze its recovery characteristics due to the ground fault types, the faults after the several cycles removed.
Through analysis on the test results, three-phase transformer type SFCL using two SMs between secondary windings was confirmed to have effective fault current limiting and recovery operations through double quench of two SMs.

Primary author: Prof. HAN , Tae-Hee (Jungwon University)

Co-authors: Prof. KO , Seok-Cheol (Kongju National University); LIM, Sung-Hun (Soongsil University)

Presenters: Prof. HAN , Tae-Hee (Jungwon University); Prof. KO , Seok-Cheol (Kongju National University); LIM, Sung-Hun (Soongsil University)

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