

Manufacture and Test of the 7-series Connected Resistive Type SFCL for 3.8 kV

J. W. Sim^{*a}, H. R. Kim^a, O. B. Hyun^a, K. B. Park^b,
B. W. Lee^b, J. S. Kang^b, I. S. Oh^b

^a *Korea Electric Power Research Institute, Taejeon, Korea*

^b *R&D Research Center LG Industrial Systems, Cheongju, Korea*

We fabricated resistive type superconducting fault current limiters (SFCL) for 3.8 kV rating based on YBCO thin films grown on 4" diameter sapphire substrates. The SFCL was composed of 7 components connected in series. Each component was designed to be able to endure up to 600 V and has the SiC shunt resistor of 40 Ω for simultaneous quench of SFCL. Fault current test was performed, considering two kinds of situation, 0 and 90 degree. Test result, SFCL successfully controlled the fault current below 94 A_{peak} within first half cycle and accomplished simultaneous quench of each component successfully. Rising time of fault current in first half cycle was 0.4 msec. Energy dispersing of the SFCL system was completed after 6 seconds from quench.

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