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An Integration method of Hybrid Power Filter for Specific Harmonic Suppression in Tokamak Power System

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This paper deals with an integration method of hybrid power filter in Tokamak Power System. The integration method not only takes full advantage of SVC which originally installed in Tokamak but also gives a combination of an active power filter to suppress the selective harmonics. Due to the rich harmonic spectrum in the AC side of non-linear load in Tokamak Power Systems, along with most reactive power compensation and harmonic filtering platforms in Tokamak barely notice low-order harmonics especially below the third harmonic, these low-order harmonics can be resonate with the capacitive impedance and inductive impedance in the circuit. The resonance will do harm to the grid system and the Tokamak system. Theoretical analyses and simulation results obtained from the EAST power system evaluate the effectiveness of the Integration method and stability of the whole hybrid power filter system. In addition, the simulation results are validated by experiments based on a testing platform.

Eligible for student paper award?

Yes

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