

Static Synchronous Series Compensator (SSSC) with low harmonic inverter.

ABSTRACT

Static Synchronous Series Compensator (SSSC) is one of the two converters of the Unified Power Flow Controller (UPFC). It provides the main function of UPFC in controlling the amount and direction of power flow in the transmission lines by varying the additional voltage magnitude, Δv and additional voltage phase shift, Φ . In this work the SSSC has been constructed using 3-level Neutral-Point-Clamped (NPC) structure in order to reduce the harmonics. The effect of the variation of additional voltage magnitude, Δv and additional voltage phase shift, Δ to the sending end voltage, V_2 has been investigated. From the results obtained from simulation and laboratory models, a small THD of less of 2% has been obtained.

Keyword: Static Synchronous Series Compensator; Space vector modulation; Converters; Unified Power Flow Controller.