Multilevel STATCOM with Third Harmonic Elimination on the DC Link Capacitor Voltages

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Abstract

Simulation studies, confirmed by laboratory experiments, show that the undesirable third harmonic inherently present on the DC link capacitor voltages of multilevel converters can be eliminated by a 6-phase configuration in a shunt multilevel STATCOM. The principle can be extended to eliminate the residual sixth harmonic by configuring a 12-phase STATCOM

Keywords: capacitors; harmonic distortion; power convertors; power system harmonics; static VAr compensators