CASCADED MULTILEVEL INVERTER BASED DSTATCOM FOR POWER LINE CONDITIONERS USING INSTANTANEOUS REAL-POWER THEORY

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ABSTRACT

Even there are different types of concepts have been proposed for conversion of square wave to sinusoidal wave form, multi level inverter plays a dominant role due to its low switching losses, simplified circuit topology and maximum reduction in the harmonic content from the square wave by increasing the number of levels between peak-peak.Among the multilevel Converters, the cascaded H-bridge topology (CHB) is particularly attractive in high-voltage applications, because it requires the least number of components to synthesize the same number of voltage levels. This paper presents an investigation of five-Level Cascaded H – bridge (CHB) Inverter as Distribution Static Compensator (DSTATCOM) in Power System (PS) for compensation of reactive power and harmonics. The results are obtained through MATLAB/Simulink software package. The proposed DSTATCOM is simulated for both linear and nonlinear loads.

KEYWORDS: Distribution Static Compensator (DSTATCOM), Instantaneous Real Power Theory, Triangular-Sampling Current Modulator, Cascaded H- Bridge Multilevel Inverter and Level Shifted Pulse Width Modulation (LSPWM)