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VOLTAGE HARMONIC DISTORTION IN AUTONOMOUS ELECTRIC POWER SYSTEM WITH AN ADJUSTABLE POWER LINE CONDITIONER

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Abstract

An improved analytical method for estimating of voltage harmonic distortions in autonomous electric power system with powerful semiconductor converter and adjustable hybrid power line conditioner had been proposed. The adjustable hybrid power line conditioner consists from uncontrolled resonant filter and PWM regulated reactor compensator. The analysis of voltage piecewise related to steady state regime of the system, taking into account the mutual influence of its elements and their parameters had been fulfilled. Analytical expressions for the voltage

harmonic distortion factor, taking into account the entire voltage harmonics spectrum in a closed finite form, were obtained. The comparison of analytical calculations and computer simulation results had been executed. References 8, figures 3, tables 2.

Key words: controlled filter-compensator gear, total harmonic distortion.

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