

Abstract

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Harmonics Analysis and Filter Design for Industrial Plants with Adjustable Speed Drives

The vast use of Adjustable Speed Drives (ASDs) in industrial plants in recent years, results in serious concerns about its effect on power system quality. The purpose of this paper is to analysis the harmonics distortion caused by the use of ASDs in industrial plants. The harmonics distortion analysis is based on data results from harmonics load flow using computer simulation of a typical industrial plant power system. A single tuned passive filter design procedures are also presented to mitigate the harmonics effect. The evaluation of harmonic distortion level after filter installation according to IEEE Standard 519 is also presented.