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This paper describes the measurements and simulations of harmonics from adjustable speed drives in a 1.2 MVA Heat Power Station application. The simulations are done in two ways, one by Pspice circuit simulator and the other by a custom developed harmonic toolbox. It is proven that Pspice is more flexible and offers a better precision in estimation, but in turn the developed toolbox is more practical and relatively accurate for many useful evaluations. Both harmonic simulations are validated by real measurements for the given plant, within an error of 5 % between the measured and the simulated data.

Due to a very close match, the simulators are used further to analyze different harmonic mitigation solutions. The best solution found by simulations, for the given plant, is an advanced harmonic filter dedicated for adjustable speed drives, which is currently in the installation stage.



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