

# **Harmonic Flow Study And Evaluation Of A Petrochemical Plant In Saudi Arabia**

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## **Summary**

Nowadays, the concern about power quality is continuously increasing, due to industry automation and use of nonlinear devices introduced in the power system. These nonlinear control devices or loads may cause harmonics or distortion to the current waveform. Such distortions will cause malfunction to the sensitive devices such as metering instruments, on-line process analyzers, and measuring devices, and false readings may be displayed. These false readings are going to affect the operation of the plant and may cause shut down and large monetary losses. The purpose of this paper is to outline the subject of harmonics and to conduct and demonstrate harmonic study on a petrochemical company power system in Saudi Arabia. The study will insure that the harmonic flows between different buses are within standards for industrial plants, and emphasize that the plant can be safely operated from the harmonics effects point of view. Also, to determine the THD values, and conduct mitigation if high THD, TIF values obtained to that are beyond the recommended practices by IEEE-519-1992.

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