Abstract

A load is said to be “linear” when it draws a current from the supply which is proportional to the applied voltage (linear). And in the case of “non-linear” load, impedance changes with applied voltage. The current drawn from such non-linear load is also non-linear i.e. non-sinusoidal even when it is connected to a sinusoidal voltage source. Harmonic currents contents which are present in non-sinusoidal currents intermingle with the impedance of the power distribution system to create voltage distortion which affects the distribution system and the loads connected to it. The serious power-line pollution is a result of increasing use of power electronic systems and time-variant nonlinear loads in industry. Hence, power supply quality is degraded. It results in the reduction of system efficiency, apparatus overheating, and increase power. As the utilization of the number of harmonics-producing loads has increased over the years, it has become highly mandatory their influence and analysis when making any additions or changes to an installation. In this paper various harmonics detection and measurement techniques have been outlined.
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Index Terms
Keywords

Non-linear loads, harmonic currents, power distribution system, voltage distortion, power signal quality, harmonic distortion.