

There the usage of
power electronic
devices ,induction



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There is a great emphasis about power quality and in particular the issue of harmonic distortion primarily due to the incorporation of more non-linear loads in a typical industrial plant. Further, power electronic based devices are widely being used for inversion, rectification and other applications. Though these devices are more effective they generate and inject harmonics into the power system. Traditionally, efficiency investigations in power systems consider only distortion-free waveforms, that is, the voltage and current waveforms are assumed to be sinusoidal.

A harmonic is a sinusoidal component of a periodic wave having a frequency that is an integral multiple of the fundamental frequency. The main sources of harmonics in power systems has been the static power converter used as rectifiers, adjustable speed drives, switched-mode supplies, frequency changers for induction heating. Since nonlinear loads represent an ever-increasing percentage of the total load of an industrial or commercial power system, harmonic studies have become an important part of overall system design and operation. Fortunately, the available software for harmonic analysis has also grown. Guidelines for the acceptance of harmonic distortion are well-defined in IEEE Standard 519-1992. By modeling power system impedances as a function of frequency, a study can be made to determine the effect of the harmonic Contributions from nonlinear loads on the voltages and currents in the power system.

The harmonic level gets increased by the usage of power electronic devices , induction furnace. This leads to the cause of minimization in reliability and stability. To overcome these problems, it is a need to maintain power quality.

These problems arise due to the electrical disturbance. Most of the

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disturbances depend on the amplitude or frequency. Harmonic causes overheating of motors, cables, transformers.

And also reduce the life span of many devices. With the rapid developments and use of nonlinear loads, the controlling technique is important over the harmonic. . So passive filter is used to reduce harmonics..