ABSTRACT

Electric power quality in arc plant can be assessed by analyzing the performance of Arc furnace, rolling mills. The detailed analysis is possible by carrying harmonic audit and determining the power levels at various locations to the plants. The Harmonic analysis is done with the help of FFT analysis.

Arc Furnace performance can be analyzed by developing model. The Rolling Mills generates harmonic of higher order due to cycloconverters and drives. The causes of higher levels of harmonics were investigated. There is a need of filters or SVC, a viable economic solution for improving energy performance of the plant.

The effect of Arc parameters on the furnace operation is analyzed. Histograms provide the statistical tool for determining quality behavior of regulation. Single regression analysis, statistical tool is suggested to determine the energy efficiency of the steel plant.

The digital electrode control optimizes the performance of arc furnace. Studies on how refractive index influences the arc stability are carried out. Phase timing variation, changing configuration of arc by digital control can enhance the furnace performance. The problem of wild phase can be corrected to some extent by optimizing refractive symmetry.

SVC provides best option for capital intensive industries for energy saving, dynamic reactive compensation and grid reinforcement features.