

ACKNOWLEDGEMENTA B S T R A C T

In this report voltage transients arising out of normal operating procedures of a proposed arc furnace system is investigated.

The importance of adequately modelling the system is stressed. Proper data collection is also emphasized. The complete system is reduced to a simpler representative system. A method of analysis is then outlined. This uses a numerical integration method to solve the circuit differential equations.

Steady state conditions are presumed to exist prior to any circuit change. Two methods of specifying the steady state conditions at the instant of circuit change are described.

The flow charts and the computer programs developed for all the cases studied are given. Results are presented which show that overvoltages are to be expected. These range in value from 1.1 p.u to about 3.6 p.u.