OZONE OPTIMIZATION HANDBOOK--PHASE 1 "STANDARDIZED PROTOCOL"

CR-106277

SUMMARY

Recent passage of more stringent drinking water regulations in the United States has encouraged consideration and implementation of ozone systems in an increasing number of water treatment plants. United States ozone facilities have grown from less than ten in 1980 to the current number of about loo facilities. Approximately 50 additional ozone facilities are planned over the next five-year period, and nine of these facilities are being constructed at water plants with capacities greater than 50 *MGD* (Rice, 1995).
In response to the increasing number of drinking water ozone installations in North America, the Electric Power Research Institute Community Environmental Center (EPRI CEC) and the American Water Works Association Research Foundation (AWWARF) sponsored the Ozone Energy Efficiency Project. The primary focus of the Ozone Energy Efficiency Project is to develop and demonstrate energy savings opportunities while achieving water quality objectives at water treatment plants utilizing ozone. About 75 percent of an ozone system' s annual operating cost is for electricity. Because of its unstable nature, ozone is produced on-site. Depending on applied ozone dose and ozone generator efficiency, from 100 to 200 kWh (or more) of energy is consumed per million gallons of water treated. This amount of energy represents approximately ten percent of a typical water system's source-to-tap total energy consumption.