



## Dissolved Oxygen Control Earns Utility Rebate

*May 1989* - The Village of Grafton, Wis. received a check for \$15,750.00 **from** the electric company on May 11, 1989. A full 50% of the cost of ESCOR's distributed process control system was paid by the Wisconsin Electric Power Company rebate.

In addition to the rebate, Grafton will save an estimated \$5,600 per year in energy costs through reduced consumption and demand.

The Grafton facility employs four 100 hp centrifugal blowers for aeration. Two conventional activated sludge basins perform BOD<sub>5</sub> removal and nitrification. Primary effluent flow and air flow are manually balanced between the two basins. Following secondary clarification the effluent is chlorinated and discharged into the Milwaukee River.

The ESCOR system was provided on a turnkey basis, with all engineering, programming, hardware and installation included. The system incorporates ESCOR's proprietary DO and blower control system, as well as electric power demand monitoring and load shedding, HVAC optimization, and continuous data logging of critical process and energy consumption parameters.

Two computers were provided with the system. The control logic, data logging and I/O polling are handled by the Central Control Unit (CCU), an industrial computer located in the plant's existing graphic display panel. This is a completely solid state unit and no disk drives, keyboards or monitors are required for operation. Several days of logged data are stored in the CCU. Battery backed memory can save the program and logged data for several months without external power.

Operator access to the system is through a conventional PC. Use of the separate PC enables the operator to access the system for data reporting and setpoint changes on an occasional basis. The rest of the time the PC is available for report generation, operations analysis and other applications. A modem is provided so the system can be remotely accessed by ESCOR.

Two remote I/O panels were provided. One is located adjacent to the blowers for inlet valve control. The second is near the MCC and the existing blower surge panel for blower motor control.

Sensors provided by ESCOR include the two DO transmitters, indoor and outdoor air temperature sensors for HVAC optimization and a power meter pulse relay connected to the electric company's meter. The four motor operated inlet valves were also included. Existing instruments were incorporated into the system for influent flow, final DO and air flow to the secondary aeration basins and post aeration.

Tom Krueger, manager of the Water and Wastewater Department and Operator Rich Wesson were closely involved in the design process. The calculations and liaison with Wisconsin Electric were included in ESCOR's service. The rebate was part of the utility's "Smart Money" program which encourages conservation and demand limiting for industrial and commercial customers. A significant portion of the savings was obtained by eliminating unnecessary blower starts during summer months. ■

For additional information contact the Village of Grafton WWTP at (414) 377-1440. If you would like more information about ESCOR contact Tom Jenkins.