

PROJECT NARRATIVE



System Description

System: WDPF

Location: Akron, Ohio

Application: Wastewater Treatment

Initiation: December 1992

Completion: October 1994

Consultant or A/E: Finkbeiner, Pettis & Stout, Limited, Toledo, Ohio

Major WDPF Components:

- 12 Distributed Processing Units
- 3 WESation Engineer Stations (1 Dual CRT, 2 Single CRTs)
- 6 WESation Operator Stations
- 1 X-Terminal Operator Station
- 1 Redundant Historian and Logger
- 1 WESation Calculation Builder/Oracle LAN Server
- 6 Remote Q-Line I/O Units
- Redundant Fiber Optic/Coaxial Cable Data Highway
- Fiber Optic Information Highway

Distributed Control System I/O Point Count:

- Analog Inputs: 885
- Analog Outputs: 180
- Digital Inputs: 2529
- Digital Outputs: 745



The City of Akron continues to plan for the future with its WDPF// system by Emerson Process Management

CITY OF AKRON *Water Pollution Control Station Located in Akron, Ohio*

The Akron Water Pollution Control Station embodies some of the most modern processes and equipment available for wastewater treatment to service 400,000 residents through 1,200 miles of sewers in and around the city.

The plant is located on an 834-acre site along the Cuyahoga River. Plant capacity is 240 MGD with a normal average flow of 90 MGD. Primary treatment at the plant includes traveling screens, a bypass channel, grit removal tanks, Venturi meters, storm retention basins, pre-aeration tanks, a chemical feed unit, and primary setting tanks. The secondary treatment is the activated sludge process consisting of aeration tanks, final setting tanks, air blowers, and post-chlorination contact tanks. The city's sludge handling and disposal process includes the primary sludge gravity thickeners, dissolved air floatation thickeners, sludge dewatering presses, incinerators, sludge mixing and holding tanks, and compost building.

The City selected Emerson Process Management's WDPF control system, which encompasses approximately 2800 plant I/O points and over 5000 internal software points. The powerful WDPF system allows the city to improve basic process performance, with added benefits to administrative and regulatory compliance functions.

Value to the Customer

The current WDPF system has achieved significant improvements at the plant. For example, it permitted engineers to identify process modifications that reduce electrical consumption by as much as \$250,000 per year.

The new control system allows operators to better anticipate storm water flows and to maintain stable plant chemistry levels, resulting in a higher quality effluent. The system provides a more accurate pacing of sludge, as well as an accurate accounting of sludge volume delivered to the contractor. WDPF allows operators to spend much less time manually collecting, recording, and manipulating process data. Each month, the City saves scores of administrative hours thanks to WDPF's streamlined reporting process.

Benefits of the WDPF System

- Operators can better anticipate storm water influent flows, minimizing the need to bypass.
- Operators maintain stable plant chemistry levels, reducing the shock of high quantities of influent to the process and yielding higher quality effluent.
- Operators are now more confident in the accurate pacing of sludge with an automatic sludge withdrawal program resident in the WDPF system.
- Individual process area operators have the added security a new central control room, which acts as a second pair of eyes to oversee areas of responsibility and improve overall operations reliability.

The WDPF system has allowed the operators to spend much less time manually collecting, recording, and manipulating process data, freeing them to concentrate on process performance. By incorporating industry-wide standards such as X-windows, TCP/IP, and UNIX, the system offers a true client-server-oriented operating system that can integrate process data and information across the various hardware and software platforms. For instance, mandatory EPA regulatory compliance reports once required manual compilation of data by several departments including Operations, Laboratory, and Administration—a very labor intensive and time consuming task. The WDPF system streamlines the reporting function through the system's integrated relational database management system. Now, all data necessary to prepare monthly operating reports from various departments can be compiled by an operator clicking on an icon from the control room console display, saving the City literally scores of administrative hours.