REAL-TIME SOFTWARE CONTROLS INDUSTRIAL PROCESSES

Can You Imagine . . .

. . . a software-based system that can monitor and control plant processes remotely from multiple terminals.

In light of environmental regulations and growing populations, upgrading or expanding waste and drinking water treatment plants has become a priority for many municipalities. Officials are plunging into several relatively high technology improvements, including more advanced computerized automation systems. Called supervisory control and data acquisition systems (SCADAs), this technology allows technicians and managers to monitor and control the newer, more sophisticated plant processes remotely from multiple terminals, rather than being limited to a single computer center at the plant site.

A notable example of this trend is the upgrade of a water treatment facility for the growing population of Las Vegas, Nevada. In this project, officials installed an advanced automation and control system called TIS 4000® derived from software used to control a BMDO-funded particle beam accelerator. Developed by Tate Integrated Systems (Owings Mills, MD), the software-based system combines the features of SCADAs with distributed control systems, so that plant technicians can monitor and control the various parameters of their water treatment systems in real time through graphical tools. For example, users can link a graphic of a water pump with a parameter such as flow, and then control that process.

TATE HAS FOUND SEVERAL MARKETS FOR ITS TIS 4000®, WITH $10 MILLION IN SALES SLATED FOR 1996 ALONE.

The TIS 4000's open architecture allows its use with a wide range of hardware. Through graphics, trend windows, and text, users see—and control—what is happening in their processes in real time. The system also features alarms that direct an operator to areas where problems occur.

Tate licensed the technology three years ago from both Los Alamos and Argonne National Laboratories (Livermore, CA, and Argonne, IL, respectively), tailoring it for municipal and industrial processes. The company found many uses for the product and expected $10 million in sales in 1996 alone. For example, Tate has installed TIS 4000 in Libby Owens Ford's new glass plant to automate and control the annealing stage of glass production. The company also sold the software for petrochemical uses for offshore oil production in the Arabian Gulf. The St. Louis County Water Authority uses TIS 4000 for its drinking water treatment facility, and Baltimore Gas and Electric uses it for its liquid natural gas terminal.

■ One of Tate's many applications for its TIS 4000® product is to automate and control oil production and distribution systems.

In addition to pursuing domestic markets, Tate sells its system abroad in such areas as Russia and South America. The company has established a joint venture in Malaysia to capture Southeast Asian markets.

Tate notes that the system can handle energy management in buildings. The product can control a building's heating, ventilating, and air conditioning systems to optimize and control energy usage and environmental conditions.

ABOUT THE TECHNOLOGY

TIS 4000 operates on a wide range of client hardware or on off-the-shelf equipment supplied by Tate and is simultaneously connected to both a local area network (LAN) and a wide area network. The standard system runs on commercially available workstations and bridges to networks of personal computers with minimal software modifications. A basic TIS 4000 system requires only a few building blocks (workstations, a LAN gateway, and remote terminal units or a process control unit), although larger systems are possible.