Hazardous Gas Detection for Wastewater Treatment Plants

MSA The Safety Company | **field**server

Interfacing Gas and Fire Detection to Allen Bradley EtherNet/IP Process Control System

Wastewater treatment facilities are located in every community and region of the country. The process of treating the wastewater results in the use or production of a range of combustible and toxic gases that are a danger to the plant and personnel. In addition, there are many enclosed spaces in a wastewater treatment plant where toxic gases can build up or non-toxic gases can deplete the oxygen making it dangerous to plant personnel.

At a major WWTP in the Midwest, the district utilized Allen Bradley EtherNet/IP as the plant wide protocol for process control. While EtherNet/IP is a major protocol with in the process control industry there are not gas detector systems that utilize EtherNet/IP as their digital communication link. Thus, the plant was faced with the challenge to link the vital hazardous gas information to their existing Ethernet infrastructure which utilized Allen Bradley EtherNet/IP protocol.

The Sierra Monitor Sentry system was their gas detection system of choice since it utilized Modbus RTU communications. Sentry Modbus communications was converted into an Allen Bradley EtherNet/IP using a gateway from Sierra Monitor. The FieldServer became the universal gateway to provide the most convenient way to connect these new gas detection systems into the plant-wide Ethernet. Using EtherNet/IP to communicate to all of the satellite mounted gas detection controllers meant that critical alarm and measurement data can be obtained quickly and simply. This information can be used to display critical data on operator workstations and archived for historian purposes. EtherNet/IP is becoming widely accepted as the best communications choice for Supervisory, Control, and Data Acquisition (SCADA) systems. It is relatively inexpensive and easy to install. It can be shared between various systems to optimize the available bandwidth, and the hardware required to operate it is off-the-shelf. Alarm, events, gas levels, and specific trouble or fault conditions can only be transmitted using an intelligent gas sensor module with digital communications.

Interfacing Fire Safety System to a Plant-Wide Monitoring System

A major wastewater treatment plant in Southern California utilizes Modbus RTU in all its process control and safety systems. The district, like most, has many buildings at each of their treatment plants. The Fire Alarm Control system of choice for these plants was Notifier by Honeywell. As with most industrial and municipal plants the district needed to interface all process control and safety systems into their common control system. Sierra Monitor provided the proven and efficient link between the Notifier Fire Alarm Control Panels (FACP) and the Sun Microsystems work station at their Central Operation Monitoring Center ("COMC").

Utilizing the FieldServer solution, the district was able to monitor all Fire Safety conditions at each of their multiple wastewater treatment plants from the Central Operations Monitoring Center. Prior to uti-lizing the FieldServer interface, the district was plagued by too many false alarms and the need to utilize expensive manpower and possible shutdowns to respond to these false alarms. Now, with reli-able access to remote Fire Alarm Control Panels, the personnel at the COMC can easily monitor the conditions remotely and greatly reduce the costs of false alarms.

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit **MSAsafety.com/offices**.