Case Study

Wireless Data Access

Company Profile

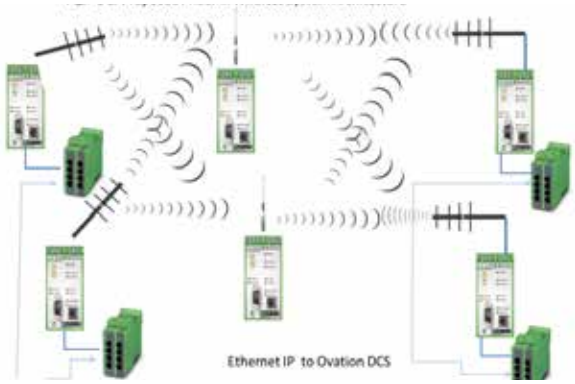
This customer is one of the world's largest energy delivery systems as a provider of electric, gas, and steam.

Challenge

A power utility needed to install new aquatic life filters on their incoming water feed from the local river bordering the facility. Code changes necessitated the installation of new filters to protect the environment and company's equipment from intrusion by aquatic life forms. A new system was being installed by a third-party contractor on the dock area where the incoming water flows were located. This new skid included its own PLC-based control system.

The data from this new system needed to be monitored by the Distributed Control System within the main plant, which was across a highway and about a quarter mile away at a change of elevation of seven stories. Running a new data line via traditional wiring or fiber was cost-and time-prohibitive.

Solution



Rawson/Industrial Controls provided a three-part wireless Ethernet system to bring the customer's PLC data to the DCS control room. Because there was no direct line-of-sight from the dockyard equipment to the control room, a repeater station would be necessary to ensure reliable communications between the PLC and DCS. Since there was no power feed available at the repeater location, a solar-powered control panel was fabricated to provide power to the radio for continuous communications between the controllers. Because this communication is considered critical, a primary/secondary radio arrangement was made which would allow for communication in the event of individual radio failures. Also included were voltage and current sensors to alert the end user if battery voltage or charging current went below specified criteria.

Results

A 900 MHZ radio system was employed to maximize distance and minimize obstruction interference. A low-pass filter was employed to block out noise from pager systems utilizing part of the license-free bandwidth. Our engineers were able to design the system to include the solar power with monitoring and redundant radios. Rawson/Industrial Controls' engineering team was able to provide drawings and start up to ensure reliable operation.