

Flex-Pro A3V Peristaltic Pumps Eliminate Vapor-Lock Problems

Application

South Coast Water District (SCWD) provides water to more than 40,000 and over two million visitors a year in the coastal communities of southern Orange County, California.

SCWD treats potable water with a chloramine system immediately after it leaves a large RO system. This process requires a precise ratio of Sodium Hypochlorite to Ammonia. Diaphragm pumps were chosen for the chloramine chemical feed system.

Problem

During system startup or when demand was very low, the Sodium Hypochlorite had a tendency to off-gas resulting in vapor-locking of the diaphragm pumps. "Anytime the [chloramine] system goes down, the entire RO system must be shut down, which results in a system downtime of about an hour and a half. The RO system does not like to be shut down." With help from the diaphragm pump manufacturer, SCWD installed auto-degassing valves to eliminate vapor-lock. The auto-degassing valves were expensive, required frequent maintenance and did not eliminate the problem.

SCWD tried other technologies to eliminate the problem, including multistage diaphragm pumps, and gear pumps. These technologies introduced other challenges such as excessive wear, part failures, expensive maintenance costs, and long down times for periodic maintenance.

Solution

SCWD installed three Flex-Pro A3V peristaltic metering pumps. Two of the three pumps run continuously, the third pump is used as a backup pump. If the pump tube should rupture, the patented Tube Failure Detection (TFD) system will shut down the pump and can automatically startup a backup pump eliminating downtime. All pumps are monitored remotely using a SCADA system. "Many of my associates have been closely monitoring the performance of these pumps. There has been zero downtime and the pumps have performed flawlessly with no maintenance and no signs of tubing wear. Using the built-in tube timer, we are able to view the current tube's run time."

Another benefit to the Flex-Pro pump over the diaphragm pump is price. SCWD was paying twice as much for the diaphragm pumps that failed to handle the task. SCWD is very pleased with the results and have placed an order for more Flex-Pro peristaltic metering pumps to be installed at other sites.

Model Installed: A3V24-SNK, feed rate .3 to 33 GPH, up to 125 PSI

