

Peristaltic Metering Pump solves Biological Build-up challenge in Industrial Water Reuse Application

Southern Company's Stanton Energy Center located in Orlando, FL

The robust and efficient CHEM-FEED® Dual Pump Engineered Skid Systems, equipped with the Flex-Pro® A3V Peristaltic Metering Pump, are well suited for industrial water treatment applications.

The CHEM-FEED® Dual Pump Engineered Skid System, with Flex-Pro® A3V peristaltic pumps, is a full chemical feed system, that is cost effective and easy to install.

Stanton Energy Center is a natural gas-fueled, combined-cycle electric-generating unit which includes: Two natural gas-fired combustion turbines; two heat-recovery steam generators and a steam turbine. The facility, run by Southern Power in Orlando, FL, has the capacity to generate 656 megawatts. Biological build-up prevention is necessary in the maintenance in the water tubes of the condenser element. Any build-up within the condenser would greatly decrease the efficiency to produce steam, consequently reducing mechanical power. This biological build-up is remedied with the injection of Chlorine into the water reuse system.

Previously, Southern Power utilized Chlorine Gas for the prevention of biological growth; however, maintaining liquid gas onsite required full-time support of an Emergency Management Team. By switching to the alternative of 12.5% Sodium Hypochlorite liquid solution, Stanton Energy was able to eliminate the EMT, resulting in reduced operating expenses.

One challenge when using 12.5% Sodium Hypochlorite injection is its off-gassing nature. The Flex-Pro® A3V peristaltic pump technology allows excess gas accumulation to be pumped through the tubing, while also maintaining a smooth, highly accurate and constant flow rate without the potential for vapor lock. A further attribute of the Flex-Pro® A3V design is the exclusive, patented Tube Failure Detection system (U.S. Patents 7,001,153 and 7,284,964). The TFD alerts the operator if tube failure occurs, and shuts down the pump until the problem is resolved, and chemical removed. This feature helps ensure facility chemical rooms and operators remain safe from leaks resulting from tube failure.

The Flex-Pro A3V is capable of feed rates up to 33.3 GPH/126 LPH, with a 2500:1 turndown ratio. Maximum pressure rating is 125 PSI / 8.6 Bar.

The System can be designed to function with one pump as the primary pump, and a secondary pump set as an emergency back-up, reducing potential downtime, and giving operators the opportunity to perform routine pump maintenance without system shutdown. The TFD system can trigger this back-up situation in the event of tube failure.

CHEM-FEED® Skids are constructed of lightweight powder coated welded aluminum, and can be wall or floor mounted. Stanton Energy Center elected a floor mounted unit, installed in an outdoor housing for protection from the elements.

The Skid Systems exclusive flow indicator visually indicates solution delivery; Self-filling calibration cylinder (flooded suction not required); a drip containment tray, removable for easy cleaning; proven Plast-O-Matic® ball valves and components including, a Pressure Relief Valve which protects the system from over-pressurization, and Metal-free check valve for operator protection from back-flow during maintenance.

CHEM-FEED® Dual skid with Flex-Pro® metering pumps is able to resolve water treatment challenges, such as those found at The Southern Power Stanton Energy Plant, with solutions for problematic chemicals and their system implementation.

