

# Power plant upgrades to efficient, reliable water-treatment solution



**MPW TEAM REDESIGNS EQUIPMENT, OPERATIONAL PROCEDURES OF AGING, UNRELIABLE CAPITAL RO SYSTEM**

A Florida power plant (oil- and natural gas-fueled, combined-cycle unit) elected to enhance its makeup water treatment system because it was unable to produce adequate flow to feed the boiler system. Effects of the aging system included high operational and substandard water quality. Subsequently, the plant ordered mobile DI trailers to achieve acceptable flow and quality requirements.

Needing to address these conditions on a more permanent basis, the power plant turned to MPW to provide an engineering and fabrication solution. MPW's experience and unique ability to evaluate, design and upgrade in-house systems proved to be the cornerstone of the project.

## SOLUTION

After analyzing the current system, water source and requirements from plant operations, MPW recommended changes in the design of the equipment and operational procedures to create an efficient, reliable and cost-saving solution.

MPW installed variable-frequency drive (VFD) controllers on the pumps for energy savings and process control, providing the added benefits of lower maintenance cost and increased reliability. System PLC logic was upgraded as well to improve valving and piping for maximum efficiency. The changes allowed the power plant to convert from double-pass to single-pass to meet flow requirements during peak operations. MPW installed larger carbon filters and re-bedded multimedia filters to ensure adequate filtration and water quality, as well as to reduce the need for additional chemical treatment of the city-water feed source. Remote monitoring, with automated quality control-measures, was added to increase reliability.

MPW Field Service Technicians were contracted to run the water system, providing additional cost savings for the plant and offering operational and system reliability. The technicians and engineers worked closely with plant personnel, construction and engineering teams to implement the system upgrades.

## RESULTS

MPW's system provided the plant with a highly efficient and reliable water-treatment solution. The upgraded water system provides the plant with the ability to run in double pass mode, as well as single pass mode when increased flow-rate is required.

The MPW re-designed system eliminates the need for six additional DI trailers per year.

MPW Field Service Technicians maintain and run the system on a daily basis. Relying on MPW employees, the power plant saves time and money.

**COMMITMENT TO SAFETY**  
**MPW recorded zero safety violations during this project**