

Disinfection &
Dechlorination



Power



Alabama, US

Disinfection & Dechlorination at Alabama Power Plant

Disinfection & Dechlorination of Water at Power Plant

A natural-gas-fueled, combined-cycle electric generation plant in Alabama had two combined-cycle units at 659 megawatts each, with a combined capacity of 1,318 megawatts. The plant needed to treat and disinfect raw water before it entered the ultrafiltration pretreatment system and dechlorinate the water before entering the RO system to prevent biofouling and chlorine oxidation.

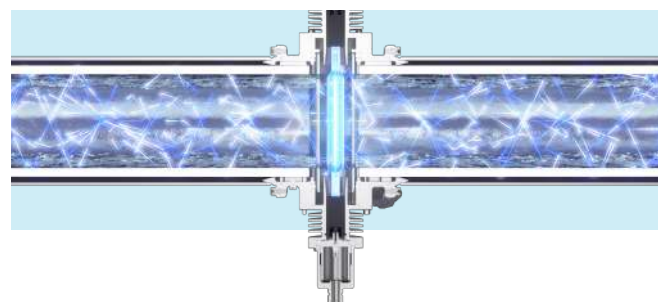


The Solution

In December 2015, the plant installed two HOD™ (Hydro-Optic Disinfection) UV systems. HOD UV combines ultraviolet water disinfection technology with hydraulic and optic principles. The system features the unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution, provides superior power (kW) efficiency compared to traditional UV, and achieves unprecedented micro-organism inactivation.

One RZ Series system, provides non-chemical disinfection of deleterious microbes, including microbial-induced corrosion (MIC), while also reducing and stabilizing the amount of chlorine required for process water. A second RZB Series UV system was installed to provide a higher level of disinfection and dechlorinate water prior to entering the reverse osmosis (RO) system in order to protect the membrane elements from biological fouling and oxidation from chlorine.

The system replaces the use of sodium bisulfite, reduces the usage of chlorination, and achieves a non-chemical dechlorination process to improve RO feed water.



Results

Separating the disinfection and dechlorination applications and using two unique HOD UV systems provided the facility with increased WTP efficiency, including membrane life and quality, at lower capital and operating costs since each HOD UV unit operated under application-specific dose conditions.



Pre-RO Treatment: Disinfection & Dechlorination

Flow rate: 600 gpm (136 m³/hr)

UVT: 98.2%

Free Cl₂: 0.2 ppm



Raw Water Treatment: Disinfection

Flow rate: 1,500 gpm (341 m³/hr)

About us

For more than two decades, Atlantium Technologies has helped to ensure water safety with its innovative HOD™ (Hydro-Optic Disinfection) UV technology and novel approach to performance, monitoring, and control. Atlantium's superior, environmentally friendly water treatment solutions ensure stable, efficient, and dependable production.

With thousands of full-scale installations for leading brands in various industries globally, we're committed to consistently meeting our customers' water quality needs, ensuring pure results.

