APPLICATION BRIEF
DISINFECTION / DECHLORINATION

Atlantium
Illuminating Water Technologies

Hydro-Optic™ UV Installed at Natural Gas Facility to Provide Non-Chemical Disinfection & Dechlorination

A natural gas-fueled, combined-cycle electric generation plant in Alabama installed the Hydro-Optic™ (HOD) UV technology for non-chemical disinfection and dechlorination in December 2015. The plant consists of two combined-cycle units at 659 megawatts each, with a combined capacity of 1,318 megawatts.

One HOD UV system was installed to treat and disinfect raw water before it entered the ultrafiltration pre-treatment system. The system provides disinfection of deleterious microbes, including microbial induced corrosion (MIC), while also reducing and stabilizing the chlorine demand of the process water.

A second HOD 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.

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.

Raw Water Treatment: Disinfection

- (1) Model RZ163-12
- Flow rate: 1,500 gpm (341 m3/hr)

Pre-RO Treatment: Disinfection & Dechlorination

- (1) Model RZB300-15
- Flow rate: 600 gpm (136 m3/hr)
- Percent UVT: 98.2%
- Free Cl2: 0.2 ppm

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