Atlantium
Illuminating Water Technologies

NEWS BRIEF

UV Water Treatment
Hydro-Optic™ Technology

The Bureau of Reclamation's S&T Program Project of the Year

Controls Invasive Mussel Biofouling Using Hydro-Optic™ UV

In April 2019, the Bureau of Reclamation's Science and Technology Program selected the research project, "Control of biofouling in hydropower cooling systems using hydro-optic ultraviolet light," as Project of the Year.

The award was presented to Sherri Pucherelli, lead researcher on the study, whose goal was to determine if UV light treatment, using Hydro-Optic™ (HOD) UV — Atlantium's environmentally friendly UV technology — is capable of preventing hydroid settlement and reducing overall biofouling in generator cooling systems at Parker Dam on Lake Havasu, Arizona.

HOD UV systems were installed at Parker Dam to address biofouling concerns from Aquatic Invasive Species (AIS).

Quagga mussel infestation of reservoirs along the lower Colorado River pose significant biofouling issues for hydropower facilities in the area Biofouling in the generator cooler systems at Parker Dam has resulted in increased annual maintenance costs of approximately $80,000 per year. Medium pressure, HOD UV systems with a 100 mJ/cm^2 target dose were installed at Parker Dam to mitigate biofouling. The study was designed to monitor the impact of HOD UV on biofouling over a two-year period. Comparison of biofouling dry weight from settlement plates exposed to HOD UV-treated and untreated water indicated a significant reduction in total biofouling after HOD UV exposure. In addition, the Parker Dam facility manager confirmed that biofouling-related maintenance of the coolers was reduced by 75% after the first year of HOD UV operation and eliminated in the second and third years after implementation.

The award was selected for its positive impact to Reclamation, other federal and non-federal partners, its efforts to address the current Department of the Interior priorities, the involvement of partners, and its level of innovation.

Atlantium is honored to be part of this research project that has been recognized for its innovation and positive impact on Reclamation's ability to meet customers demands for water and power.

Why Atlantium HOD UV?

Facilities looking to address biofouling concerns from Aquatic Invasive Species (AIS) are no longer limited to chemical-based disinfection approaches that have detrimental effects to the environment. Unlike chemical treatment, the HOD UV system employs a physical process for disinfection that causes delayed mortality of mussel larvae, achieving 99% inhibition of quagga mussel veligers settlement and addressing biofouling concerns — all while keeping costs down.

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