

Pulsed UV Light for the Disinfection of Water and Wastewater



The search is on for new water and wastewater treatment technologies. Chlorine, the most common treatment option, poses environmental and health concerns. Researchers have associated its byproducts with increased cancer risk. The use of chlorine in a gaseous state, which is its cheapest form, presents dangers of accidental release—a risk the U.S. Environmental Protection Agency has responded to with strict regulation.

Meanwhile, the discovery of *Cryptosporidium* in drinking water supplies has heightened concern over water treatment options. The pathogen is resistant to conventional drinking water disinfectants, including chlorine.

A water and wastewater treatment technology using high-intensity, pulsed ultraviolet (UV) light shows great promise in the cost-effective, safe elimination of *Cryptosporidium* and other waterborne pathogens. The pulsed UV system works by storing power and releasing the UV energy in high-intensity “blasts” that disrupt the DNA structure of microorganisms, preventing replication. The treatment method leaves no residue.

By participating in the EPRI *Pulsed UV Light for the Disinfection of Water and Wastewater* project, you can give your customers the opportunity to assess this noninvasive technology in small municipal and private systems, as well as in large point-of-use systems such as hospitals, hotels, and prisons. The same applies to special applications such

Develops Pulsed UV Water Treatment Electrotechnology for Commercial Use

as cruise ships and airlines. This project sponsors site-specific demonstrations, while leveraging EPRI resources.

PROJECT SUMMARY This project opportunity brings pulsed UV capabilities to your customers with water and wastewater treatment needs.

It is part of the EPRI Community Environmental Center's commitment to conducting comprehensive research and large-scale demonstrations aimed at moving the technology into the market.

In this project, the EPRI team of specialists serves as an extension of your own staff, helping you to promote pulsed UV water treatment technology while expanding electricity usage and sales opportunities. The project features a pulsed UV water treatment demonstration at the customer site of your choice. It provides testing for cost and effectiveness on a wide range of applications, and includes EPRI technical support in the installation, application, and assessment of pulsed UV technology. The length of the demonstration varies, depending on the needs of your customer.

DELIVERABLES

- Demonstration of pulsed UV water treatment at your customer plant
- Technical support in the installation, application, and assessment of pulsed UV technology at the customer plant
- Final report of findings and recommendations

RETURN ON INVESTMENT So far, pulsed UV water treatment has shown nearly complete deactivation of *Cryptosporidium*, *Giardia*, virus, and bacteria (including *E. coli*, *Legionella*, and *Mycobacteria*) at a cost of less than 15 cents per 1000 gallons. This project will produce valuable site-specific information on the use of pulsed UV in water and wastewater treatment.

By providing your customers with this information, you will enhance your business position, while establishing expertise in a promising industry development. And, replacing chemically based water disinfection methods with use of pulsed UV treatment electrotechnologies will increase your electricity sales opportunities.

DEMONSTRATED VALUE Only EPRI has the diverse resources necessary to position your company to win customer loyalty in today's increasingly competitive energy services market. EPRI's broad knowledge of energy customers, changing markets, and international developments can help you anticipate and shape the changes that are transforming the energy industry along with the needs of your customers.

For nearly 30 years, EPRI has been at the leading edge of market insights and technology development, delivering a wide range of products, support, and services. In 1997, the company managed \$428 million in collaborative technology development and demonstration projects. EPRI has created an unparalleled network of technical experts, research allies, manufacturers, industry representatives, and marketing specialists from around the world. As an objective source, EPRI can seek the best technology, vendor, and fit for your particular needs.

PRICE OF PARTICIPATION An investment of between \$20,000 and \$60,000 is required to participate in this project, depending on the size and complexity of your customer's facility.

PROJECT STATUS AND SCHEDULE This project is open to participation and will begin as soon as funding is secured. Project length is tailored to the needs of your customer.

CONTACT INFORMATION

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