



Council Bluffs UV Disinfection Project Receives Outstanding Bids

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FOX Engineering and the City of Council Bluffs have been teaming together on the study and design of a new Ultraviolet (UV) disinfection system for the City's 31 MGD Water Pollution Control Plant (WPCP). The project will use ultraviolet light from multiple UV lamps to inactivate pathogenic organisms in the wastewater effluent prior to discharge to the Missouri River. The UV lamps will be vertical in orientation and the system, supplied by Ozonia North America, will be the **largest UV installation in the State of Iowa.**

FOX and the City explored several disinfection options during the study phase such as gas chlorination, liquid chlorination and on-site generation of liquid chlorine. A major challenge was to evaluate the impact of the plant's trickling filter effluent on various options such as chlorine or UV. This involved multiple on- and off-site lab simulations. Other specialized disinfectants with little experience in wastewater applications such as Ozone, Chlorine Dioxide and Peracetic Acid were also considered. As part of the analysis, FOX and the City carefully planned and conducted a dye tracer study on the City's existing 85-foot diameter chlorine contact tank. In the end, UV disinfection was determined to be the most cost effective, operator friendly and safest option for treatment. FOX and City staff conducted visits and evaluation of various UV equipment installations to optimize selection and operator enhancements.

The UV equipment was procured based on a present-worth evaluated bid to incorporate capital costs, energy efficiencies and operating and maintenance costs into the overall equipment selection. This process resulted in a very competitive bid with Ozonia North America being awarded the procurement contract. Eight remarkable bids were received on the construction project in January 2010. Nelson Construction Engineering, Inc. of South Sioux City, Nebraska, was awarded the contract for a lump sum price of \$2.79 million which was 9% below the engineer's estimate. UV equipment procurement will allow a shortened construction period and start-up of the UV system in October 2010. The implementation schedule was designed to allow the City to meet their new permit limits by the spring of 2011.

