Bright Idea: Filtration and Finances

It's likely the light bulbs in your home came from one glass plant in central Kentucky. Nearly 10 percent of all glass bulbs used to make incandescent light bulbs in the world is manufactured at this Philips Lighting plant. Sand, the main raw ingredient, comes from one particular Tennessee mine. To melt the sand, furnaces reach temperatures in excess of 4000&#176F. Other additives are added to the molten silica to produce the types of glass used.

Glass plants use enormous amounts of water in their processes. This facility had tried to recycle its water but ran into difficulties. Heat exchangers plugged, cooling jackets clogged, and instruments to detect the level of molten glass in furnaces overheated when cooling water lines choked. Production decreased, waste increased, and labor costs rose. The expedient answer was to use potable water passing through the facility once and then release it to the environment through a permitted discharge. However, with this course of action, purchased water consumption doubled. Nearly a quarter million dollars a year was spent on water alone. Resident engineers began focusing on the problem. After evaluating alternatives, Tom Broderick, maintenance manager, decided to install automatic self-cleaning screen filters in the pump house to remove sediments and suspended solids from the detention pond near the offsite discharge. This filtered water was then sent back to the plant at flow rates varying from 800 to 1,800 gpm for various uses such as cooling vacuum pumps.

Because the two vertical turbine pumps took up so much space in the pump house and forklift access was necessary periodically to pull the pumps, most style filters would not fit into the available space. As a result, Broderick chose two filters from Orival Inc. for the job. These Model ORG-060-LS automatic filters are vertical in orientation and use little flow for the self-cleaning process. Orival Inc. is a manufacturer of self-cleaning water filters, automatic water filters, and strainers for use as industrial water filters, irrigation filters, and cooling tower filters. "I couldn't believe that the filters were an in-stock item," said Broderick. "Our water bill has decreased by $10,000 per month since installing the Orival filters." In fact, the plant has experienced a savings of $120,000 per year on a capital investment of $11,000, resulting in full payback in just 33 days.

More information about filter applications is available by contacting Orival Inc., Englewood, NJ, at 800-567-9767 or by visiting www.orival.com **[1].**

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