

MURNIK, JON* and MIKE THOMPSON, Hydrite Chemical Company, 300 N. Patrick Blvd., Brookfield, WI 53008. **Potential savings from sugar defoamer flow monitoring and display.**

ABSTRACT

To optimize foam control performance in a sugar factory, defoamer must be applied at the correct minimum dosage and accurately adjusted up or down in response to changing foam control needs. Traditionally, this has been accomplished through manual inspection of tank levels and frequent factory oversight to minimize over and under application. The Hydrite Chemical Company has developed a novel, cost-effective approach to match defoamer feed rates to actual defoamer demand while optimizing defoamer usage efficiency through the application of novel technology that precisely monitors extremely low defoamer flow rates, permits settable alarm points that alert when flow rates are outside permitted values, and remotely provides information to plant personnel and chemical suppliers on a real time basis. New engineering, control, and communication approaches were required to support this endeavor. A solid state sensor that monitors the mass flow in the moving fluid (defoamer) was at the heart of the current approach, and it provided a flow reading that ultimately matched readings taken with lab instrumentation to within a milliliter per minute over the full range of defoamer application rates. Computing support was developed to accept and digitize flow information, perform calculations, and provide graphical displays on the factory floor. Finally, supervisory control and display graphics interface was accomplished over the Internet allowing remote defoamer monitoring and control. This novel approach is currently being implemented at Amalgamated Sugar Company in Nampa (Idaho), and based on initial field trials, it is expected to provide demonstrative cost savings over the unsupervised chemical application by significantly eliminating defoamer waste.