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SUCCESS STORIES

Canandaigua Wine Company

A large alcohol distilling unit at Canandaigua Wine Company's Mission Bell Winery has successfully restarted after shutdown for the installation of revolutionary PlantWeb field-based automation from Fisher-Rosemount. The automation upgrade may have saved the 37-year old still. Taste tests indicate that the 2000 proof-gallon/hour, sieve-plate column distillation unit has begun producing a 191- to 192-proof neutral spirit of a grade that may be useful for inclusion in Canandaigua's highest quality brandies and fortified wines. In the past, alcohol from the unit was so inconsistent it had to be redistilled at another winery. The company seriously considered tearing down the still and rebuilding.

"At the root of the problem were the unit's failing 1950s-era pneumatic controls," indicated Robert Calvin, Director of Engineering - West Coast for Canandaigua. "At first we thought poor alcohol quality was due to leaking condensers, metal erosion, and collapsing plates. But tests and gamma ray inspections proved that the all-stainless steel unit was still sound."

The Mission Bell Winery, dating from 1894, is the third largest in the world measured by grape crushing capacity and cases of wine per year. Table wines produced include the Almaden, Inglenook, Taylor, and Arbor Mist brands. Feedstock for the winery's distillation unit is a mixture of fermented sugars from the remains of grape processing, off-spec product, sediment from fermentation tanks, and good wine more valuable distilled. The PlantWeb field-based automation solution now operating the still provides the power and capabilities of a conventional DCS in a substantially more cost-effective package offering distributed intelligence, rich data collection, and remote diagnostic, calibration, and maintenance capabilities. The architecture includes a DeltaV automation system with redundant controllers and PC workstations, as well as FOUNDATION fieldbus and HART field devices. The application is believed to be the largest fieldbus installation in California.

"Fieldbus was chosen as the primary communications protocol to minimize wiring, assure the highest speed and accuracy, enable diagnostics and calibration from the workstations, and provide a wealth of information," Calvin said.

"Plate temperatures in the main column are now monitored, for instance, allowing a temperature profile generated by the automation to detail the distribution of alcohol and other distillates in the column. We didn't have that before. Because the PlantWeb architecture is scalable in sophistication as well as size, an upgrade to a control strategy based on mass and energy balances is planned for the near future," Calvin commented. "Balance-based control should further tighten and smooth the process."

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