

Major Chemical Manufacturer Reduces Waste Disposal Costs through Advanced Process Control (APC)

Production rate increases created a bottleneck in terms of the combustion capacity of the waste fuels boiler (WFB), resulting in significant outside disposal costs for the excess organic waste. MAVERICK experts were engaged to maximize capacity of the existing system.

Objective

The customer required an innovative, automated control strategy to maximize the amount of waste fuels sent to the WFB and to remove the burden of this task from the operators. With a new APC strategy, the customer hoped to automatically feed the WFB at its maximum capacity under varying process conditions and during process upsets — reducing the need for additional off-site waste disposal.

Results

The project met and exceeded the automation and budgetary expectations — even though the operators initially thought the project goals were impossible to achieve. The new APC strategy led to a more consistent increase in feed rate — at about 10 percent — and a more stable oxygen composition. After an original project investment of \$20,000, the customer achieved a two-month payback period and now experiences recurring annual savings.

Solution

Existing System: Due to production rate increases from several process units, the organic waste streams had grown beyond the combustion capacity of its waste fuels boiler (WFB). Waste that wasn't burned in the WFB had to be shipped off-site for disposal at a significant cost to the business on a per-pound basis.

APC Analysis: MAVERICK analyzed the current operation and determined that combustion air was the limiting combustion variable.

APC Design and Implementation: MAVERICK designed the new APC strategy to maximize the throughput of the WFB by minimizing the oxygen in the stack. MAVERICK then directed the implementation of this new control approach that would push the WFB feed

against a low oxygen constraint. The advanced controls were implemented on a NovaTech DCS, using standard algorithms and function blocks.

Control Platform: A special high-temperature override logic circuit contributed significantly to the success of the new control strategy. Previously, the unpredictable nature of periodic, high-BTU slugs of waste gas and vapor feed frustrated operators, but the new logic circuit allowed them to maintain maximum feed of high-temperature waste on a continuous basis. Because operators no longer had to manually struggle to control the feed, they were able to focus their attention on more productive efforts.



The MAVERICK Difference

MAVERICK's team of advanced process control experts was able to design a new control strategy that reduced the need for off-site waste disposal. The customer was extremely pleased with the results and with achieving a two-month payback period. See what MAVERICK's advanced process control experts can do for you!



A Rockwell Automation Company

MAVERICK Technologies, LLC

265 Admiral Trost Drive | Columbia, IL 62236 USA

+1.888.917.9100 | Fax +1.618.281.9191

info@mavtechglobal.com | mavtechglobal.com