

CONDENSER RECOVERY

Optimization



Initial Use Case

A Flint Hills Resources facility was experiencing operational difficulties with a partial condenser unit downstream of their reactors. The product recovery was not only lower than expected but also unpredictable. Shut down times due to frequent condenser cleanings resulted in a loss of production and overall profit that totaled roughly \$1M annually. The facility's goal was to improve the percent knockout of the unit. This would extend the time between unplanned shutdowns and create a more stable knockout rate over time. Analytics engineers from EFT partnered with the Flint Hills Resources facility to optimize the various process parameters associated with the partial condenser and upstream reactors.

"I was impressed with EFT's ability to quickly identify key operational variables and their ideal operating ranges. In addition, the consistency of their analysis gave me confidence to implement their recommendations on my unit."

— **Angelica Iacobucci**, Optimization Engineer,
Flint Hills Resources

Solution

EFT delivered a summary report identifying key variables and variable ranges to improve product recovery in the unit. The optimum effluent cooler operating temperature, reactor feed rate and composition were identified and a live dashboard monitor was deployed. Through EFT's Advanced Analytics platform, plant engineers and operators can monitor and optimize their process in real time. This implementation also provided new insights into the unit's overall operation to increase production outside of product recovery.