

AIGC Solutions – Optimization and Modeling

Case Study: A refiner uses Automated Rigorous Performance Monitoring to optimize operations & maintenance

The Opportunity



A large refiner aims to maximize crude throughput, and corresponding feeds to downstream plants. The refinery consists of an atmospheric crude oil distillation section, a vacuum flasher, a Coker, and associated hydrotreaters

The Approach

It uses Automated, Rigorous Performance Monitoring (ARPM) to monitor plant performance. They built a complete Performance Monitoring model of the atmospheric unit and use it to reconcile and fit heat exchanger fouling factors and distillation column tray efficiencies.

The Benefit

The software has enabled the identification and repair of or faulty replacement instruments. The Reliability Supervisor reports that they have optimized their maintenance targets and schedules using its results. The best maintenance targets are not always obvious or intuitive. The ARPM helps maximize their return on maintenance investment.

One owner-operator recently used the quality information to make an important decision affecting their gas plant's turnaround schedule. The software had highlighted a debutanizer tower as underperforming. Operations staff felt the cause was damaged tower internals and recommended opening the column during the next scheduled turnaround. The unit's contact engineer uses ARPM to study performance patterns and demonstrated that the performance problem could be corrected by changing the tower's operational guidelines. The resulting decision to leave the building unopened substantially reduced the overall turnaround schedule and expense while maximizing operating profit.