Catalysts and Technology Licensing
A case study

ExxonMobil

InFocus™ Unit Monitoring Tool could have helped avoid up to 40% reduction in catalyst life

Energy lives here™

Challenge

Avoiding shutdowns by detecting impact to changes in sulfur specification

A major diesel producer on a 36-month catalyst changeout cycle runs a hydrotreater with a target product sulfur specification of 8 wppm. Typical operation variability routinely leads to over-treating product sulfur by 2 wppm. The diesel producer expects that the over-treating of the diesel hydrotreater product sulfur by 2 wppm has a negligible impact on cycle length, so no objections are raised to the "cushion" in operation.

Considering average hydrotreating catalyst activity, over-treating to 6 wppm S from 8 wppm S in the product requires approximately 15°F average catalyst bed temperature increase. At an average hydrotreater deactivation rate of ~2°F/month, this increase in operating catalyst temperature is equivalent to approximately 15 months of cycle length reduction. Additional or expedited catalyst changeout incurs unplanned costs and could impact overall refinery production due to unit integration.

Solution

Implement InFocus™ Unit Monitoring Tool

The InFocus Unit Monitoring Tool enables early detection and minimization of lost cycle length. In addition, it would help avoid unplanned costs from unexpected catalyst changeout. In this situation, the producer assumed over-treating product sulfur had a negligible impact on cycle length, but the InFocus Unit Monitoring Tool would have promptly identified a significant impact on cycle length that could have resulted in time and money savings.

The InFocus Unit Monitoring Tool enables timely technical insights to improve process performance. Drawing on our breadth of technical and operational experience, the monitoring tool provides users with:

- Easier access to ExxonMobil expertise
- Early identification of potential concerns
- More meaningful analysis

Potential savings:

~$400,000 lost production depending on the size of the unit

Collaborate with us today.
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