Question 10: What strategies do you employ to meet cycle-length targets in naphtha hydrotreaters that are reaching catalyst activity limits due to capacity increases or feedstock quality decreases?

RHODES (Marathon Petroleum Company)

To increase cycle length on an NHT hydrotreater, the refinery needs to understand the contaminants that the reactor must handle and optimize the bed loading to maximize cycle length, as well as have the ability to handle the contaminant.

Silicon (Si) can be a big concern on NHT reactor cycle length. For the units that process coker naphtha, modification of the coker operation to minimize the injection of Si-based antifoams is key to improving cycle length. Si-based antifoams are used in the coker where the silicon will breakdown and end up in the naphtha fraction leaving the unit. Silicon silicon,

shows high arsenic that

poisons. Active catalyst typically

the hydrogen issue.

STEVEN UOP)

Asa catalyst manufacturing, and Moreover, we feed, such silicon, along system.

For loading. There material, or material. Depending constraints.

RALPH LLC)

Feedstock may form detrimental. Strategies

1.Implementation of a corrosion inhibition program –either by selection of materials of construction or chemical treatment or a combination of both –in the unit upstream can significantly reduce inorganic fouling. When using HTCI (high temperature corrosion inhibition) to process high TAN (total acid number) crudes, Dorf Ketal TANSCIENT™ can reduce phosphorous added to the crude by up to 80%.

2.Proactively determine metal content in the crude and develop a crude blending strategy to minimize the impact of metals. Dorf Ketal's non-acid reactive adjunct desalter chemistry can supplement emulsion breakers fed to the desalter and remove iron and calcium to increase flexibility in the selection of crudes.

3.Implementation of a chemical treatment program containing antifoulant chemistry –which may include antioxidants, organic and/or inorganic (FeS) dispersants –has been proven successful in increasing the unit run-length.

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