

AFPM 2014 Q&A and Technology Forum

GASOLINE PROCESSES	
Safety	
1	What independent protection layers (IPLs) are used in cyclic reformers during regeneration to prevent hydrocarbon and oxygen mixing through isolation valves? What IPLs are employed to prevent improper valve switching?
2	What are the best practices for backflow prevention on naphtha processing units (especially Naphtha Hydrotreating units)?
3	What considerations should be made in determining the need for a safety instrumented system (SIS) in an Isomerization unit? What safety integrity level (SIL) does the panel use for temperature excursions, liquids fed to the regeneration superheater, or other significant safety events? What typical unit design features are implemented to mitigate these safety events?
4	Are there any recent safety improvements in the procedures or equipment for sampling sulfuric acid?
5	What are the alternatives to gauge glasses in alkylation units? Are there any specific services where glass gauges are preferred?
6	What are the best practices for mitigating and monitoring Corrosion Under Insulation (CUI) in cold services such as Alky/Isom units?
Theme	
7	Comment on the value generation potential of each of the refinery gasoline processing units - reforming, naphtha hydrotreating, isomerization, alkylation, and FCC-gasoline post-treating. What interplay exists between the units that can be leveraged?
8	What are typical run lengths between maintenance turnarounds for gasoline units? What evaluations should refiners make to ensure that a prolonged turnaround interval is the most profitable choice?
9	With a significant portion of the current workforce eligible for retirement, what is being done to preserve and pass-down the knowledge to the new employees entering the industry?
10	How are process engineers being assigned responsibilities: divided by technology; operating complex; projects, etc.?
Alkylation	
11	What is the experience with advanced control of sulfuric acid flow and strength?
12	The industry is recently discussing alternative metallurgy specifications for HF alkylation units. What experience or comments can the panel share on this issue?

*Order of Questions is subject to change.

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Alkylation (Cont.)	
13	What steps are taken to ensure that the olefin content of the normal butane stream from the alkylation unit being fed to the isomerization unit is being controlled within specification?
14	What are the advantages and challenges associated with alkylating amylenes?
Aromatic Extraction Units	
15	What methods are employed to improve performance and life of aromatic extraction unit clay treaters?
Blending	
16	In recent years the gasoline blend pool has shifted due to increased ethanol blending, higher volumes of high RVP material from processing lighter crudes, and other specifications changes. How are refiners taking advantage of these changes to optimize the gasoline processing units?
17	How does alkylate contribute to gasoline blend pool sulfur? With pending Tier III regulations, what steps can refiners take to understand and control this contribution?
18	Does the panel have experience with gasoline corrosivity due to breakdown of organic fluorides from alkylate? Is the issue mitigated by increasing the residence time in tankage prior to blending?
Choloride Beds	
19	What are the common locations and adsorbent types for chloride treating beds in gasoline process units? What practices are used to best manage this asset?
Project Management	
20	What are the current typical lead times for reforming, isomerization, naphtha, and FCC gasoline post-treating catalysts? What is the future outlook for these lead times?
Naphtha Treating	
21	Has the panel had experience with buildup on pump seals in stabilizer or debutanizer reflux pumps that process material that potentially contains chloride salts? In what circumstances might salt dispersants be used and could they mitigate or aggravate this phenomenon?
Reforming	
22	What is the best method to clean a "Texas Tower" type of combined feed/effluent exchanger? Comment on the differences between cleaning in-place, extraction and reinsertion, and online cleaning.
23	What are the sources of platinum loss in precious metals catalysts? What role can the refinery engineers play in minimizing this loss?
24	What is the maximum oxygen content allowed for the platinum redistribution step in a fixed bed reformer? What sets the maximum oxygen concentration?
25	What factors contribute to the decision to place the regeneration section of a CCR in standby mode when the unit is operating in a low-coke mode? Discuss the advantages and disadvantages of the different standby modes (black-catalyst circulation, hot-shutdown, cold-shutdown, etc.).

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Caustic Treating	
26	What are options for disposition of the caustic regeneration offgas stream associated with an LPG or gasoline caustic treater? What measures have been successfully used to prevent fouling, pluggage, and corrosion in this line?
Shale Crudes	
27	What impacts are naphtha processing units seeing from contaminants suspected to come from shale crudes (e.g. tramp amines, chlorides, fouling)? What is being done to mitigate these impacts?

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