AFPM 2014 Q&A and Technology Forum

	HYDROPROCESSING
Safety	
28	What is the best practice for determining the maximum allowable temperature rise in hydrotreating beds? What solutions are available for managing temperature rise?
29	What are current best practices for protecting the charge heater from backflow?
30	What is the minimum charge heater firing limit, especially when highly heat integrated or when processing cracked stocks? Do any hydroprocessing units run without firing the charge heater?
31	As more and more refiners consider installing zeolite catalyst in their hydrotreating units, what are the recommendations for a depressuring system?
Optimization	
32	What solutions are available to refiners for extending cycle length in distillate hydrotreating units limited by product color?
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Mechanical Integrity	
34	What are the latest industry experiences related to sulfidation detection and prevention?
35	What is the criteria for retiring a hydroprocessing reactor? What kind of failures have been seen? What are the inspection techniques used and frequency of inspection?
36	Can the panel provide insight to best practices for prevention and repair as it relates to chloride stress cracking and polythionic acid stress cracking of stainless steel equipment in hydroprocessing units?
Equipment Design	
37	What are the typical design criteria for injection quills (i.e. slotted vs. nozzle, direction, spray pattern, filter mesh, metallurgy, etc)?
Hydrogen Generation	
38	What design modifications, such as pre-reforming and ATR (Autothermal Reforming), are being considered for greater feedstock flexibility, higher efficiency and capacity debottlenecking?
39	How can we improve temperature control in steam methane reformer tubes? What monitoring practices are recommended to avoid overheating the furnace tubes?
40	What are the current best practices when crimping pigtails on a hydrogen plant? Are there any metallurgical limitations?
41	Can the panel comment on the use of liquid and/or vaporized naphtha as feed and/or fuel to a hydrogen generation unit?

*Order of Questions is subject to change.

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Hydrocrackjing	
42	How do you optimize operating strategies in a hydrocracking unit that does not have an intermediate sample point between the treating and cracking catalyst?
43	How has the increased processing of synthetic and other opportunity crudes in a refinery impacted the buildup of HPNA's (Heavy Poly Nuclear Aromatics) in the hydrocracker and affected conversion? What new strategies have been utilized to address this?
44	**Driving Profitability** What strategies have been utilized to balance available catalyst life in hydroprocessing units with scheduled turnaround times, and how can this be optimized to increase profitability?
Hydrocracking	
45	Has bromide been reported in hydroprocessing unit feeds or discovered as ammonium bromide in the reactor effluent exchangers? If bromide is present, are the same wash water practices for ammonium chloride deposition sufficient to avoid exchanger fouling? What are the possible sources of bromides?
46	Silicon uptake on hydrotreating catalysts is an increasing problem. (1) What operating conditions favor maximum silicon pickup by the catalyst? (2) Are there differences between silicon from coker antifoams and other sources? (3) Does the presence of other contaminants such as nickel and vanadium affect the silicon pick-up by the catalyst? and (4) What best practices are used for monitoring silicon pick-up by the catalyst?
Future Growth	
47	How will an abundance of low cost hydrogen impact growth/expansion plans for North American refineries?
Feed Composition	
48	Can DAO (Deasphalted Oil) be processed in a full conversion hydrocracker and if so what concerns would need to be considered?
49	What experience have you had in identifying the incompatibility of feeds to a Hydroprocessing Unit? Can these feeds create pressure drop issues? What kind of feeds/compounds are typically incompatible? What test(s) do you suggest? Are there any solutions such as catalyst loading modifications to eliminate typical issues?
50	What strategies have been used for maintaining the ratio of cracked/SR (Straight Run) feed for hydrotreating units as the coker cycles through coke drums?
Dewaxing	
51	What is a minimum Cloud Point Improvement that makes economical sense to apply catalytic dewaxing vs. traditional (i.e. additives and kero blending) Cold Flow Improvement methods?
Biofuels	
52	Explain the differences with renewable and Biodiesel. Can renewable feedstocks be co processed with traditional diesels in an existing ULSD (Ultra Low Sulfur Diesel) unit and how does this impact RIN's (Renewable Identification Number)?

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Tier III	
53	How are refiners planning to meet Tier III gasoline specifications? Please share strategies for post-treat and pre-treat options, feedstock selection and catalyst technology?Can renewable feedstocks be co processed with traditional diesels in an existing ULSD (Ultra Low Sulfur Diesel) unit and how does this impact RIN's (Renewable Identification Number)?

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