

AFPM 2014 Q&A and Technology Forum

CRUDE/VACUUM DISTILLATION & COKING	
Safety	
54	What methods and technologies are being used to monitor vapor pressure and H2S levels in the vapor space in crude railcars and trucks? What engineering controls are being used by the rail and trucking companies to insure that the vapor pressure and H2S are being met?
55	What operating procedures and designs are being used to increase the safety of drilling coke drums?
Coker	
56	How will the recently announced EPA requirement to depressure coke drums to below 2 psig prior to venting to atmosphere regulations impact Coker operation and design?
57	If vacuum tower bottom feed to the Coker unit drops below unit minimum charge rate, what are the operating options available to the refiner?
58	What are refiners using for velocity medium in coker heaters? Is anyone using boiler feed water?
Crude Handling	
59	What is your experience processing a crude oil that has been treated with a pour point depressant and/or wax dispersant agent?
60	How does the mercury in crude distribute in the refinery (e.g., what units are affected)? What operating procedures or technology are used to mitigate this issue?
61	What measurement and/or predictive methods are used to determine crude oil blend compatibility?
Crude Units	
62	What are the advantages and disadvantages to constructing "modular" refining process units versus traditional "stick built" units? What are the issues with each construction approach?
Unit Ops	
63	For the operating company panel members, what are crude unit typical run lengths between shut downs? What factors are considered when setting this run cycle?
Desalting	
64	Some crudes appear to have chlorides that are not readily removed in the desalter. What are sources for these undesalted chlorides? How are the various undesalted chlorides detected and mitigated?
65	What are the advantages and issues with different desalter wash water sources in a refinery? What issues can occur by combining wash water from multiple sources?
66	What desalter instrumentation issues are experienced when switching from a light gravity feed to a heavy gravity feed?

*Order of Questions is subject to change.

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Waste Water	
67	What is the industry experience with toxicity issues at the Water Treatment Plant as related to naphthenic acid content in desalter brine water? What strategies are being employed to mitigate this issue?
Fouling	
68	Processing tight oils can generate increased fouling in the preheat train. What are the top couple of causes and how are they mitigated?
Furnace	
69	What is the industry experience with using thermal scans or other methods to monitor tube wall temperature of furnaces?
Atmosphere Tower	
70	Please discuss the merits and detriments of using low-base strength or high-base strength neutralizers for corrosion control in atmospheric column overhead.
71	What is the industry best practice for responding to a ruptured heater tube in the crude unit?
72	What discrepancies are seen between simulation predictions and actual crude and vacuum operational data?
73	There is increasing economic incentive to operate crude units to yield maximum middle distillate volume. What targets are refineries using to quantify the degree of separation between naphtha and kerosene and between diesel and gas oil? What amount of distillation curve overlap is considered good practice? What guidance are operators given to achieve the target separation?
Vacuum Tower	
74	What are the main causes of vacuum jet ejector poor performance? What methods have been used to mitigate these issues?
75	Does anyone draw liquid hydrocarbon from the overhead system in the vacuum tower after the pre-condenser? What is the operating temperature of the tower overhead? What issues are observed?
76	What is considered industry Best Practices with respect to the control of thermal cracking in vacuum tower bottoms? If quench is not available, what other parameters are monitored and controlled? How are the target control points established?
77	What operating procedures are used by refiners to mitigate/prevent coking issues in the vacuum tower from loss of wash oil pumps?
78	What economic issues must be considered when deciding how deep to cut heavy vacuum gas oil?
79	What is the industry experience with respect to the use of trough distributors in vacuum wash zone service? Please address installation, reliability and performance.

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Answer Book Only	On your CDU's that employ 300 series stainless steel metallurgy in the vacuum transfer line, has anyone experienced any issue with PTASCC (polythionic acid stress corrosion cracking)? This area is very difficult to passivate with say soda ash per recommended NACE procedures, and we would like to know of any such PTASCC experience.
Answer Book Only	SRU sulfur production is being changed significantly as some plants operate in batch operations between heavy and tight oil crude runs. What modifications are being made to accommodate the SRU turndown to ensure high reliability?