



2014 Annual Meeting
March 23-25 ~ Hyatt Regency Orlando~ Orlando, FL

Program Descriptions

ISSUES

“Unique Challenges Outside the Environmental Department Related to Flares”

Larry Darcey, Sage Environmental

AM-14-01

This presentation will discuss recent regulatory changes and enforcement actions that affect flares. The content will focus on how these changes impact not just the environmental team, but also operations, engineering, maintenance, and instrumentation teams. The presentation will present the changes in layman’s terms for plant operations, rather than confusing regulatory language and provide insight on how to prepare for the upcoming changes.

“RFS2 Version 2.0, Armageddon Averted”

Thomas Hogan, Turner, Mason & Co.

AM-14-02

The US Environmental Protection Agency has proposed significant modifications to the renewable fuels program known as RFS2. This paper will review the changes and contrast them with the original regulations. It will also explore their impact on the availability of renewable identification numbers (RINs), the challenges to refiners to meet the proposed revised obligations and what the proposed changes will mean for the future.

“Revisiting RINsanity: RIN Market Update and Renewable Fuels Standard Outlook”

Anna Temple, Wood Mackenzie

AM-14-03

Uncertainty regarding the Renewable Fuels Standard has resulted in volatile RIN markets to the detriment of US refiners. We will provide clarity to the drivers of these markets, and discuss potential enforcement scenarios.



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PROCESS SAFETY

“API Process Safety Site Assessment Program Overview”

Andrew Broadbent, API

AM-14-06

This presentation will discuss how the program was developed, how the site assessments are conducted, some learnings and trends from the program, and how the program will provide benchmarking information for process safety for sites as well as for the refining and petrochemical industry.

“Creating a Culture of Safety through Effective Leadership”

Steven Anderson

Integrated Leadership Systems, LLC

AM-14-07

Accidents cost companies all over America millions of dollars per year. Therefore, safety should be a top priority for your company since a single accident can cost lives and damage a business in many ways. Dr. Anderson will share the lessons he has learned from consulting with construction and energy businesses for over ten years. He will share the secrets of how leaders can create a culture of openness and trust that leads to discussions of “near misses” that will reduce the likelihood of accidents occurring at your business. Dr. Anderson will also share a program he developed with a Midwestern construction company that helped them win a national award for safety excellence from the Associated General Contractors of North America.

“The Human Side of Errors”

Ian Nimmo, Center Human Factors * Ergonomics LLC; David Lee, User Centered Design Services Inc.

AM-14-08

The objective of this paper is to shed some light on human error in the processing industry and review some of the strategies to prevent or mitigate it. Ever since the introduction of computer-based systems industry has experienced organizational accidents, which have been catastrophic in nature.

Organizational accidents are a product of technological innovations that have radically altered the relationship between systems and their human elements.

Investigations have revealed some common issues and the latest research has identified best practices to either prevent or mitigate the consequences of such accidents.



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“Networks Enhance Process Safety”

Doug Evans, Suncor Energy; Dr. Chitram Lutchman, Safety Erudite

AM-14-09

Process safety management and other human factor considerations have improved reliability of many operating facilities in many industries. Unfortunately, what has gone wrong in hazardous processes is still going wrong as evidenced with recent events involving tragic consequences. Organizations remain vulnerable to memory loss, repeating mistakes, and reinventing critical knowledge. Organizations need processes and systems to support knowledge capture, knowledge transfer, and sharing learnings and best practices. Networks can provide a formalized and strategic approach to accomplishing these tasks and reduce process safety events.

“Only You Can Prevent MI Fires - Six More Case Studies of Big Incidents”

John T. Reynolds, Intertek/Moody AIS

AM-14-10

Alarm Upgrades Via Rationalization

Kevin Brown, Honeywell Process Solutions; Allen Bauman, Access Pipeline

AM-14-11



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ADAPTING TO TIGHT OIL

“Will OPEC Defeat US Tight Oil and Will Majors Stand on the Sideline?”

Ann-Louise Hittle, Wood Mackenzie

AM-14-12

We will examine whether OPEC production could lead to a slowdown in US tight oil production growth. The paper will examine the global supply and demand balance and whether lower oil prices can affect US tight oil production. So far, problems with OPEC production have prevented a price collapse. Can this continue for the next decade?

“Challenges and Solutions for Processing Opportunity Crudes”

Michael Dion, GE Water & Process Technologies

AM-14-13

The first line of defense for successful refinery crude unit corrosion and fouling control is optimal operation of the desalter. Today’s opportunity crudes, including synthetic crudes, diluted bitumen, diluted crude oils, and shale oils possess a high degree of quality variation and processing challenges. Additionally, crudes and their blends can be incompatible, precipitating asphaltenes and heavy molecular weight aliphatic compounds which can increase the stability of emulsions and downstream fouling propensity. Crude quality volatility and incompatibilities elevate the importance and challenge to effective desalter operation. This paper will outline some of the quality variations in crudes, describe several methods to enhance desalter operation, and present a case history for improved desalter operation with today’s opportunity crudes.

“Distillation Heater Operation while Processing Tight Oil”

Patrícia Marques, Petrobras; Fernando Feitosa Oliveira, Pasadena Refining

AM-14-14

In this presentation we will discuss how crude distillation heater operation was optimized after starting shale oil processing. Some evaluation tools were added to the refinery process optimization routine, such as: heater simulation, thermography and crude compatibility analysis. The compiled data helped to identify the heater limits and the required changes.

“Challenges of Processing Feeds Derived from Tight Oil Crudes in the Hydrocracker”

Deepak RD

Criterion Catalysts and Technologies

AM-14-15



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“Processing Tight Oils in the FCC: Issues, Opportunities, and Flexible Catalytic Solutions”

Michael Federspiel, Kenneth Bryden and Rosann Schiller, Grace Catalysts Technologies

AM-14-16

Shale oils such as Eagle Ford and Bakken are fast becoming a major feed source for North American refineries. While these feedstocks are generally light and sweet, issues that refiners can face when processing shale oil include: contaminant metals, heat balance effects, and configurational imbalances in the refinery. This paper provides detailed characterization of shale oils along with data on the cracking of these feedstocks under different operating conditions. Catalytic solutions for (1) metals tolerance, (2) achieving maximum conversion and selectivity on light feeds, and (3) optimum butylenes selectivity will be discussed along with case studies on how refiners can apply new catalyst technologies to maximize the value present in shale oil feedstocks.

“Diesel Hydrotreating Challenges & Opportunities When Processing Tight Oil”

Kaspar Vogt, Hiroshi Toshima, and Bob Leliveld, Albemarle Corporation

AM-14-17

The **composition of tight oil** is different than that of traditional crudes. In general, tight oil has a higher API gravity, a larger 700°F- (diesel and lighter) fraction, more contamination of Fe, Ca and Na, lower sulfur, and more paraffinic components. Other, heavier crudes can also contain more **poisons** such as Si and As if they originate from unconventional sources. Proper understanding of the mechanism for removing each **contaminant** is critical to effective guard bed catalyst system design to protect the main catalysts.

The second challenge is meeting the required **cold flow properties** due to the paraffinic nature of tight oils. Improvement of distillate cold flow properties can be achieved through a catalytic dewaxing solution. Of critical essence is the understanding of dewaxing catalysis and kinetics in concurrence with desulfurization, denitrogenation and aromatic saturation for meeting all specifications.

In addition to these challenges, the availability of low cost hydrogen creates new opportunities to **improve refinery economics** by using hydrotreating to boost volume swell and increase the intake of low value feed components, such as LCO.



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HYDROPROCESSING

“Catalytic Solutions for Increasing Middle Distillate Yields”

Greg Rosinski and Charles Olsen, ART

AM-14-18

This paper will discuss catalytic solutions for diesel product properties with regards to new crudes available including synthetic crudes and tight or shale oils. This paper will include a discussion of the chemistry involved and the implications of processing some of the unconventional crudes and tight oils for refiners.

“A New Catalyst Generation for Additional Hydrogenation and Volume Swell”

Per Zeuthen, Haldor Topsoe

AM-14-19

This paper presents the new Topsoe HyBRIM™ technology and demonstrates the catalytic possibilities with TK60g HyBRIM™. Besides increased HDS and HDIV activities, very high volume swell has been obtained.

“Catalyst Selection – A Refiner's Perspective”

George Hoekstra, Hoekstra Trading LLC

AM-14-20

This paper will describe the catalyst performance/cost trade off from the refiner’s perspective and the options available today for independent catalyst testing.

“A Step-Wise Approach to Meeting the Growing Imbalance between Diesel/Gasoline Production”

Larry Wisdom, Eric Peer, Mike Craig, and Cedric Perat, Axens North America

AM-14-21

In this workshop we will discuss a number of strategies that refiners can implement to increase their overall production of diesel fuel. Specific examples which cover a wide range of solutions from low investments to higher investments will be discussed.

“Dewaxing Technology Enables Premium Distillate Production”

Mohan Kalyanaraman, ExxonMobil

AM-14-22

“Dewaxing Challenging Paraffinic Feeds in North America

Renata Szykarczyk, Criterion Catalysts and Technologies

AM-14-74



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FCC TECHNOLOGIES

“Capturing Maximum Values for Processing Tight Oil through Optimization of FCC Catalyst Technology”

Shaun Pan, Robert Gallogly, Alexis Shackleford, and Alicia Garcia, BASF Corporation

AM-14-23

The boom of US tight oil presents a game changing opportunity for refiners who have access to the crudes to improve their profit margins. At the same time, the impact of tight oil on FCC operations presents challenges to refiners and FCC catalyst suppliers such as low gasoline octane and lower delta coke due to the more paraffinic crude slate. This paper will present how BASF’s leading catalyst technology and excellent technical service helped BASF customers take advantage of the low cost tight oil to significantly enhance the FCC profit margin and thus the refinery profit margin.

“Shale Gas-Driven Wave of New Petrochemical Plants in North America is Opportunity for Refiners”

Dilip Dharia, Technip Stone & Webster

AM-14-24

“Advances in Propylene Maximum from the FCC Unit”

Udayshankar Singh, WR Grace

AM-14-25

“Take Action to Maximize Distillate and Alkylation Feed from Your FCC Unit”

George Yaluris and Alan Kramer, Albemarle Corporation

AM-14-26

In this paper we present a novel FCC catalyst Action™ which combines Albemarle’s matrices with novel high silica to alumina ratio zeolite technologies allowing the FCC operator to target the distillate, gasoline, and alkylate yield profile needed for maximum profitability.

“FCC Additive Improves Residue Processing Economics with High Iron Feeds”

Todd Hochheiser

Johnson Matthey

AM-14-27



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“Implementation of State-of-the-Art FCC Technology for Improved Reliability and Profitability at Deer Park Refinery”

David Hunt, Bill Munsch, Sayantan Chatterjee and Richard Sanborn, Shell Global Soutions

AM-14-28

The 2012 revamp of the FCCU at Deer Park replaced an older three-vessel Shell FCC configuration commissioned in 1984. The revamped FCCU incorporated the following Shell FCC technologies: feedstock atomization injection nozzles; reactor riser technology; closed reactor cyclones with vortex stabilizers and coke catchers; high flux Pentaflow™ stripper technology; regenerator and spent catalyst circulation enhancement technologies; and a new, more reliable “square bend” spent catalyst riser. The revamped FCCU has realized significant incremental product value over a wide range of reactor temperature as a result of incremental slurry cracking and higher LPG plus gasoline yield.



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REFINERY OPERATIONS

“Dividing Wall Column Technology for Efficient Hydrocarbon Separations”

Ian Elgey, KBR

AM-14-29

Distill-Max™ is a commercialized technology which offers a cost effective solution for a wide range of applications where three or more products are to be separated from a feed stream. It offers capital- and energy-saving potential and can be applied to grassroots and revamp projects.

“Increasing Throughput in Existing Separators: New High Efficiency Separator Internals Can Provide Higher ROI for Refinery Facility Upgrades”

Dag Kvamsdal, Cameron International

AM-14-30

“Semantic Procedure Analysis”

Thomas Kindervater , Center for Operator Performance

AM-14-31

“Planning, Design, and Implementation of the Automation System for the Marathon Detroit Refinery Expansion”

Edward Bullerdiek, Marathon Petroleum Company

AM-14-32

“Innovation Leads to New Solids Management Technology”

Douglas Longtin, Baker Hughes, Inc.

AM-14-33