

Houston, Texas

2008 NPRA Cat Cracker Seminar

Intercontinental Hotel
Houston, Texas
August 19-20, 2008



Schedule of Events

Tuesday, August 19, 2008

8:00 am – 6:00 pm	Registration	Legends Ballroom Prefunction
11:00 am – 12:30 pm	Lunch / Tabletop Exhibition	Legends Ballroom
12:30 pm – 2:15 pm	Q & A Session: Panel I –	Operations / Process Technology / Catalyst Discovery A & B
2:15 pm – 2:45 pm	Break	Legends Ballroom
2:45 pm – 4:30 pm	Q & A Session: Panel II –	Reliability / Mechanical / Refractory / Inspection Discovery A & B
4:30 pm – 6:00 pm	Reception / Tabletop Exhibition	Legends Ballroom

Wednesday, August 20, 2008

7:30 am – 2:00 pm	Registration	Legends Ballroom Prefunction	
7:30 am – 8:30 am	Networking Breakfast	Legends Ballroom Prefunction	
Concurrent Workshops	Track I: Reliability Founders Ballroom I, II, III	Track II: Operations Discovery A	Track III: Process Technology Discovery B
8:30 am – 9:30 am	Valves for Special Applications – <i>Ziad Jawad</i> and <i>Siyi Lai</i> , Shaw Energy & Chem.	FCC Heat Balance Fundamentals – <i>Dave Hunt</i> , Grace Davison	Revamp Options (A Case Study) – <i>Larry Lacijan</i> , UOP – <i>Aaron Christy</i> , Marathon Oil
9:30 am – 9:45 am	Break	Legends Ballroom	
Concurrent Workshops	Track I: Reliability Founders Ballroom I, II, III	Track II: Operations Discovery A	Track III: Process Technology Discovery B
9:45 am – 10:45 am	Expansion Joints in FCC Service – <i>Mike Cabrera</i> , Expansion Joint Systems, Inc.	Diesel Maximization Panel Discussion	FCC Health Check – <i>CJ Farley</i> , Astron International, Inc.
10:45 am – 11:00 am	Break	Legends Ballroom	
Concurrent Workshops	Track I: Reliability Founders Ballroom I, II, III	Track II: Operations Discovery A	Track III: Process Technology Discovery B
11:00 am – 12:00 pm	Refractory 101 – Fundamentals of Refractory – <i>Bob Jenkins</i> , Robert J. Jenkins & Co	Dynamic FCC Process Simulators – <i>Michael Reed</i> and <i>Srinivasan Vanchinathan</i> , Sunoco	Reactor / Regenerator Design Issues – <i>Phil Niccum</i> , KBR
12:00 pm – 1:30 pm	Lunch and Tabletop Exhibition	Legends Ballroom	
Concurrent Workshops	Track I: Reliability Founders Ballroom I, II, III	Track II: Operations Discovery A	Track III: Process Technology Discovery B
1:30 pm – 3:00 pm	FCC Turnarounds Panel Discussion	FCC Process Safety Considerations – <i>Joseph W. Wilson</i> , BP	NOx Control Technologies <ul style="list-style-type: none"> • FCC Consenters' Technology Profile • LoTOx™ • Operating Conditions, Additives, and SNCR

August 19 - 20, 2008

2008 NPRA Cat Cracker Seminar

The biennial NPRA Cat Cracker Seminar and Exhibition will be held August 19-20, 2008 at the Intercontinental Hotel in Houston, TX. The program of 12 workshops is organized in three topic tracks which enable attendees to focus on a particular aspect of FCC operation or to attend workshops that cover a broader range of interests. Whether you are in Operations, Technical Service, Maintenance, Reliability, or Process Engineering you will find a comprehensive program that meets your needs for improving your FCC's operation and reliability.

The topic tracks for 2008 are:

Reliability: workshops on Expansion Joints; Valves for Special Applications; Refractory; and Turnarounds.

Operations: workshops on FCC Heat Balance Fundamentals; Dynamic Simulators; Maximizing Diesel Yield; and FCC Process Safety Considerations.

Process Technology: Revamp Options; FCC Health Monitoring; NOx Control Technologies; and Reactor/Regenerator Design and Operation.

The 2008 Seminar will also have a Question & Answer session with industry experts who will address questions on process safety, rotating equipment, refractory, process technology, emissions controls, maintenance work processes, turnarounds, inspections, technology choices, and operations. In addition to the planned questions, the panelists will be prepared to respond to comments and additional questions from the audience.

The exhibition will showcase the latest technological advances in FCC equipment, catalysts, refractory, diagnostics, and reliability services by companies that specialize in FCC equipment and technology.

The Seminar attracts experts from throughout the industry so it is an ideal networking opportunity for anyone whose responsibilities include FCC operations.



12:30 pm – 4:30 pm
Discovery A & B

Q & A Panel I & II

A panel of nine industry experts from NPRA member companies will respond to questions that were received in response to an industry-wide call for questions.

One or more of the panel members will respond to each question and then time will be allowed for follow-up questions from the attendees who may also offer their comments and advice after the panel has responded. A transcript of the session will be distributed to all meeting attendees at a later date.

The questions are divided into the following categories:

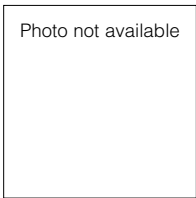
1. Catalyst
2. Emissions
3. Environmental
4. Heat Balance
5. Slurry
6. Reliability
7. Maintenance
8. Refractory
9. Operations

Eugene Arana is currently Shell Oil's Turnaround Event Manager for the next FCC turnaround at the Deer Park refinery. Previous assignments include Turnaround Supervisor, Reliability Engineering, Maintenance Engineer, and Capital Projects Engineer. Eugene has over 17 years of refinery experience that include managing or supporting over 35 major turnarounds, conducting reliability studies & investigations, leading maintenance in productivity improvements, and developing a variety of capital projects. He developed and manages a successful FCC refractory program that includes material selection criteria, refractory reliability improvement, refractory drawing updates, projections of refractory work scope for next turnaround, established life cycle of refractory linings, and refractory inspection reports. Eugene graduated from the University of Houston in 1991 with a degree in Civil Engineering.

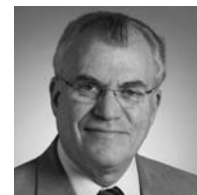


engineering from June 1978 to August 1995. There he performed metallurgical failure analysis, provided materials of construction recommendations and welding engineering technical support for operating units and new construction, mostly for the downstream business but also some support for upstream business. He served on the API Committee on Refinery Equipment, first on the Pressure Vessels and Tanks subgroup and later on the Corrosion and Materials subgroup. In August 1995 he transferred to the Denver Refinery as Area Maintenance Engineer and then Turnaround Manager. Kirk graduated in 1978 with a BS in Metallurgical Engineering from Colorado School of Mines.

Chris Fowler is an Engineering Associate with ExxonMobil Research and Engineering Company – Baytown, TX. As a refractory specialist, he is responsible for a wide variety of refining equipment. Chris holds a BS in Ceramic Engineering from Alfred University and has more than 15 years experience in refractory lining system design and maintenance.



John Huggins is Vice President of Technical Services, Coffeyville Resources Refining & Marketing. As Vice President of Technical Services he is involved in the process design for the expansion and technology improvement of the Coffeyville FCC unit. In recent months he has been involved in the selection of additives for gasoline sulfur control and for CO and NOx control. John has over 40 years experience in refinery process design, technology evaluation and application, refinery management, refinery planning and economics, linear programming development and management consulting. John has a BSChE and an MSChE from Oklahoma State University.



Kirk Carnahan is responsible for developing and improving fixed equipment reliability programs for Suncor Energy's Denver Refinery. He also provides technical support for Operations, Inspection and the Small Capital Projects Groups in the areas of corrosion, materials selection, RBI, and fitness for service and remaining life assessments and is a Designated Peer Review member for Suncor's fixed equipment technical standards. Kirk joined Conoco and worked in corporate



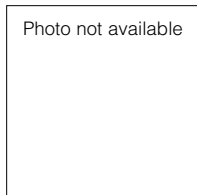
Ziad Jawad is responsible for leading the process design of reliability and optimization revamp projects, optimizing and troubleshooting operations, leading training seminars, and the start-up, shut-down, and turnaround unit support for Shaw Energy & Chemical. He previously spent seven years as an operations support engineer at a North American refinery where he was responsible for process monitoring, unit troubleshooting optimization, project design and turnaround support. He has published several articles in industry trade journals and in 2006 was a NPRA FCC Q&A Panelist. Ziad received a BSChE in 1994.



Waldi van Leeuwan

is the Engineering Manager for the FCC Hot Gas Piping replacement project, valued at \$83MM, for the BP Rotterdam Refinery in the Netherlands.

Photo not available



Jeff Sexton is the Cat Cracking technologist for Marathon Oil Company located in Findlay, Ohio. He is responsible for FCC

Photo not available



technical and operating performance across Marathon's seven refinery system. This includes responsibility for technology selection, optimization, catalyst selection, environmental performance, reliability and unit debottlenecking. Marathon has revamped all seven units which have increased system capacity by 25% while maintaining 98% mechanical availability during Jeff's tenure. Jeff previously worked for UOP in a variety of FCC assignments and has worked on over 40 different FCC units around the world. He has authored 20 technical papers, holds six pending patents and has made several presentations at the NPRA and other industry forums. Jeff is currently the Chairman of the US EPA Consent Decree FCC Technical Team and PSRI Technical Advisory Committee. Jeff holds a BSChE from Rose-Hulman Institute of Technology.

Paul Wendt is a Consulting Engineer for Houston Refining L.P., a subsidiary of LyondellBasell Industries in Houston, Texas.



In his current position he is responsible for leading a refinery-wide profitability study and providing long-term strategic guidance for FCCU operations. He has also coordinated refinery Clean Fuels initiatives and provided process engineering support for the FCCU since 2005. Before joining Houston Refining, Paul worked five years for Grace Davison Refining Catalysts as a Technical Sales representative and National Technical Sales Manager. Paul started his career in 1994 at ExxonMobil's Baytown Refinery where he held a variety of positions including FCCU Operations Support, Heavy Products Coordinator, and Operations Superintendent. Paul holds a BSChE and MSChE from Texas A&M University.

Ken Weston has 13 years of FCC experience at CITGO covering all aspects of process engineering, including process



monitoring, unit troubleshooting, optimization and process design. He has led the process design from start to finish on three major FCC revamps. He also serves as leader on a corporate FCC Center of Excellence team and as a participant on the industry FCC Consenters team. He previously spent 10 years at two other North American refineries as a process engineer responsible for process monitoring, unit troubleshooting, and optimization. Mr. Weston received a BSChE in 1985.

Operations

1. How does FCC product volume gain vary with conversion?
2. What criteria and process do you use to select catalyst or adjust catalyst properties?
3. Some units have experienced high catalyst losses from either the reactor or regenerator on start-up. What has been your experience to minimize catalyst losses during this phase of operation?
4. What operational practices do you employ to reduce NOx generation?
5. What has been your experience when installing a spent catalyst distributor in terms of NOx emissions, CO and afterburn reduction in the FCC regenerator. Are any of these experiences significant enough to allow you to eliminate NOx abatement technologies (e.g. hardware and additives)?
6. Where does the nitrogen in the FCC go? Please share any recent experience or nitrogen balance data. As a follow-up, how does nitrogen in the FCC feed affect NOx emissions?
7. What reliability issues for emissions control equipment have you encountered? What actions have you taken to improve reliability?
8. What are you doing to improve energy efficiency in FCC units?
9. What permissives do you recommend for energization of a flue gas electrostatic precipitator (ESP)? What trip inputs and outputs do you recommend?
10. What range of technologies are being used for EPA Consent Decree compliance?
11. What is your experience with fouling on the shell side of a FCC Debutanizer Reboiler? Has the fouling occurred with tube side temperatures of 700°F or less?
12. What has been your experience using gasoline sulfur reduction additives for long-term control of gasoline sulfur and during FCC feed hydrotreater turnarounds?
13. What has been your experience controlling the unit heat balance with severely hydrotreated feeds?
14. Condensable particulate matter (PM) is becoming regulated by many states. What has been your experience in measuring PM?
15. Is it possible to increase the yield of 1- and 2-butene from the FCC without seeing a marked increase in isobutylene?
16. How are FCC process models used to predict unit operation and optimize performance?
17. Have you revamped a 2-stage regenerator to 1-stage regenerator? What are the driving forces that would lead a refiner to consider such a revamp? Would you maintain partial combustion mode in the modified regenerator?
18. What do you do with FCC slurry heavy deposits in the refinery?
19. What is your experience with fouling in the slurry loop with respect to:
 - a. Feed quality
 - b. Slurry loop residence time
 - c. Main fractionator bottom temperature
 - d. Design of the bottom-head of the main fractionator
20. What are typical slurry flash values and what has been used to control it?
21. What is your plant experience with respect to technologies available for removal of catalyst fines from slurry oil or main fractionator bottoms? Please comment on settlers and tankage, hydrocyclones, electrostatic separators (Gulftronic), and filtration equipment. Are these systems considered reliable and/or operator intensive?
22. What has been your experience with new stripper technologies?
23. What parameters are used to monitor feed quality to the FCC?
24. What are the top three parameters for reliability monitoring?

Notes

Reliability

25. What are the top three parameters for reliability monitoring?
26. What methods for on-line expander cleaning have been successful?
27. Erosion caused by catalyst is a threat to FCC reliability. What laboratory standardized tests exist to compare catalyst erosion on a relative basis?
28. What reliability issues exist that may shorten the run length of the CO boiler, SCR, flue gas scrubber, or ESP, and how are these managed? Do any of these devices limit the FCC run length?
29. How do you clean slurry product tanks? How often do you have to remove them from service? How long does it take until they can be returned to service? How do you know when to remove a tank from service? What do you do with the solids removed from the tank?
30. Do you have an "established" service life retirement for FCC Reactor / Regenerator lining systems?
31. Are there any new or emerging technologies to address the problem of FCC cyclone lining erosion?
32. How can FCC slide valve reliability be improved? What do you consider to be state of the art design for maximum reliability? Is there any routine monitoring that must take place?

33. What recent improvements have been made in main air blower and wet gas compressor reliability and availability? How often do these devices shut the FCC unit down unexpectedly? What do you routinely monitor to ensure reliable operation?
34. What is your experience with sonic (acoustic) horns on CO boilers? With retrofitting existing CO boilers from steam sootblowers to sonic sootblowers? Are there other alternatives to them? How effective are they vs. steam?
35. What is your experience with each of the following equilibrium catalyst withdrawal piping items?
 - a. Long radius bends vs. tees (capped elbows)
 - b. Metallurgy of piping and valves
 - c. Erosion in the system
 - d. Temperature requirement for off-loading the hopper to disposal (vacuum truck or other)

Notes

**2008 Cat Cracker Seminar
Program Committee**

Jeff Buck
Program Chair
Shell Global Solutions
US
Houston, TX

Emerson Domingo
Sunoco Inc.
Philadelphia, PA

Andy Hett
National Cooperative
Refinery Association
McPherson, KS

Mark Korsmo
ConocoPhillips
Ponca City, OK

Mart Nieskens
Shell Global Solutions
US
Houston, TX

Gary Stephens
UOP LLC
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Aulton Anderson
Marathon Oil
Findlay, OH

CJ Farley
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David Hunt
Grace Davison
Houston, TX

Bob Ludolph
Sunoco Inc.
Marcus Hook, PA

Ken Peccatiello
Valero Energy
San Antonio, TX

Bill Wilson
BP Products
North America
Naperville, IL

Jerry Crail
Motiva Enterprises
LLC Convent, LA

Dan Flake
Suncor Energy Inc.
Commerce City, CO

Scott Jernigan
Exxon Mobil
Baytown, TX

Harvey McQuiston
Shaw Energy &
Chemical
Houston, TX

George Stegner
Coffeyville Resources
LLC
Coffeyville, KS

Travis Wright
Pasadena Refining
Systems Inc.
Pasadena, TX

David Jones
Murphy Oil USA Inc.
Meraux, LA

Phil Niccum
KBR
Houston, TX

**Track I
Reliability**

Founders Ballroom I, II, III

8:30am – 9:30 am

Specialty Valves for FCC Applications*Siyi Lai*, Shaw Energy & Chemical
Ziad Jawad, Shaw Energy & Chemical

Many FCC valve applications present unique opportunities due to extreme services. This presentation offers an overview of specialty valves designed to tolerate a variety of common, but challenging FCC environments.

**Track II
Operations**

Discovery A

8:30 am – 9:30 am

FCC Heat Balance Fundamentals with a Mechanical Perspective*Dave Hunt*, Grace Davison

This workshop will explore the unit parameters which influence the FCC coke yield. Delta Coke will be discussed and why it is critical to the successful operation of the FCC unit. During our discussion we will also discover how mechanical changes to the unit can influence the FCC heat balance and unit performance. Do you think you know all of this already? Come take the Quiz and find out.

**Track III
Process Technology**

Discovery B

8:30 am – 9:30 am

Revamp Options (A Case Study)*Larry Lacijan*, UOP LLC
Aaron Christy, Marathon Oil

The workshop will focus on the recent FCC revamp at Marathon's St. Paul Park refinery. Highlights include new reactor vortex separation system (VSS™) internals, new grid side stripper, new regenerator air grid, and a new third stage separator for stack PM reduction.

**Track I
Reliability**

Founders Ballroom I, II, III

9:45 am – 10:45 am

Expansion Joints in FCC Service*Mike Cabrera*, Expansion Joint Systems, Inc.

Expansion joints are critical to the proper function of an FCC unit. They allow flexibility in the catalyst transfer lines by relieving the stress at the nozzle attachments. This workshop will discuss the detailed applications of expansion joints around the FCC unit, their basic design, and troubleshooting potential problems during their service life.

**Track II
Operations**

Discovery A

9:45 am – 10:45 am

Diesel Maximization's Effects on FCC Operations – Panel Discussion*Jeff Oberlin*, Albemarle
Ken Peccatiello, Valero Energy
Rama Rao, Lummus Technology
Herb Telidetzki, Tesoro Petroleum

The panelists will review the steps taken by one refiner to maximize diesel yield and discuss the constraints that may come into play and how to relieve them, the role of catalyst formulation, and the scope of yield changes that may be achieved with hardware changes, revamps, and grassroots design. Much of the session will be available for attendees' questions and discussion with the panel.

**Track III
Process Technology**

Discovery B

9:45 am – 10:45 am

FCC Health Check*CJ Farley*, Astron International, Inc.

Operational reliability is one of the most important parameters defining success in the refining industry today, usually going far beyond yields and optimization. The ability to meet the operating and budget plan is often far more important than the ability to gain an incremental 0.5 vol % yield. FCC reliability in particular is of key interest due to the nature of the FCC operation, and FCC unit health monitoring is a key activity to ensure operating plan success over the 3 - 6 year run lengths required today. FCC monitoring strategies will be discussed. Key performance indicators of interest will be explored as well. The workshop format will include a presentation, but most of the time will be devoted to a discussion with the attendees.

Track I**Reliability**

Founders Ballroom I, II, III

11:00 am – 12:00 pm

Refractory 101: Fundamentals of Refractory Selection, Installation, Inspection and Repair*Bob Jenkins, Robert J. Jenkins & Co.*

The workshop is a down-to-earth presentation designed to provide refractory insight to those with little to no refractory background. The intent is to impart a basic understanding and appreciation of the complexity and importance of high quality refractory lining systems.

Track II**Operations**

Discovery A

11:00 am – 12:00 pm

Dynamic FCC Process Simulators*Michael Reed, Sunoco
Srinivasan Vanchinathan, Sunoco*

This workshop will discuss the use and benefits of a training simulator for operator training. The presentation will provide a detailed account of Sunoco's implementation experience on a FCC unit including the challenges, training requirements/methodology, and means of sustaining the program long term.

Track III**Process Technology**

Discovery B

11:00 am – 12:00 pm

Reactor / Regenerator Design Issues*Phillip Niccum, KBR*

Major hardware design areas will be discussed with emphasis on practical process and mechanical considerations for vessel construction, cyclone systems, air/steam distributors, feed injection, reactor-riser, spent catalyst stripper, catalyst regenerator, dense phase catalyst cooler, and equipment inspection and start-up considerations.

Track I**Reliability**

Founders Ballroom I, II, III

1:30 pm – 3:00 pm

Turnaround Panel Discussion*Rob Hill, Valero Energy
Steve Tiek, Motiva Enterprises
Ryan Miller, Houston Refining
Patrick Stanley, ConocoPhillips
Melvin Paden, UOP Inspection*

The panelists will discuss their recent experiences conducting FCC turnarounds with an emphasis on improvements that they have made and how their turnaround strategies, tactics, and processes are evolving in response to changes in the business climate.

Track II**Operations**

Discovery A

1:30 pm – 3:00 pm

FCC Process Safety Considerations*Joseph W. Wilson, BP*

As the primary conversion process in many refineries, the FCC occupies a central position in the overall refinery process. This makes safe and reliable operation a critical issue. This workshop will focus on several aspects of FCC process safety, including risks that are specific to the process, safety expectations and process safety communications. The program will be presented in the form of a facilitated discussion between the speaker and the attendees.

Track III**Process Technology**

Discovery B

1:30 pm – 3:00 pm

NOx Control Technologies

- FCC Consenters - Technology Profile, *Jeff Sexton, Marathon Oil*
- LoTOx™, *Jim Parrish, Lion Oil*
- FCC NOx Emissions Control Experience: Operation, Additives, and SNCR, *William Henning, ConocoPhillips*

FCC unit operators are being challenged with reducing and controlling their flue gas NOx to lower stack emission limits. This workshop will present and discuss several viable options for meeting this goal. Control technologies considered by the EPA FCC Consenters Group will be reviewed and refiners' experiences with state-of-the-art equipment and catalyst additive technologies will be presented. Operating practices for managing NOx will also be shared with workshop attendees.

List of Exhibitors

Exhibition Floor Plan and Tabletop Exhibitors

Legends Ballroom

Tuesday, August 19

11:00 am – 12:30 pm

Lunch / Tabletop Exhibition Open

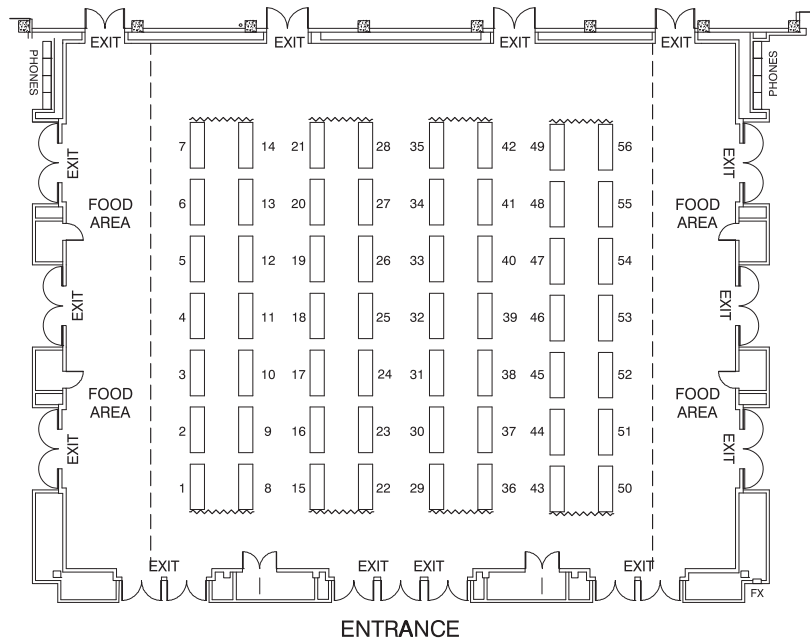
4:30 pm – 6:00 pm

Reception / Tabletop Exhibition Open

Wednesday, August 20

12:00 pm – 1:30 pm

Lunch / Tabletop Exhibition Open



Exhibitors Listed Alphabetically By Company

Company	Table #	Company	Table #	Company	Table #
Aggreko	23	Harbison-Walker	47	Rotating Machinery Services, Inc	58
Albemarle Corporation	20	Hi-Tech Industrial Services, Inc.	16	Scaffolding and Shoring Services	54
All Tech Inspection	42	Hotwork-USA	28	Senior Flexonics Pathway	26
AltairStrickland Group	1	Industrial Gunite, Inc.	5	Shaw	13
Atlas Copco Prime Energy	12	InServ-Integrated Service Co. LLC -		Stellar Materials / Thermbond	39
BASF Catalysts LLC	44	A Willbros Company	51	Stress Engineering Services	33
Belco Technologies Corporation	36	INTERCAT	37	Structural Preservation Systems	46
BJ Process and Pipeline Services	32	JV Industrial Companies	31	Stud Welding Assoc.	21
Brand Energy and Infrastructure Services	29	Lawrence Pumps Inc.	60	Sulzer Chemtech USA, Inc.	10
Buell Div. Fisher-Klosterman	3	M.E.A., Inc.	19	Superheat FGH Services	11
CAR-BER	56	Matrix Service Company	41	TapcoEnpro International	2
Continental Fabricators, Inc.	7	McJunkin Red Man Corporation	18	Team Industrial Services, Inc.	15
Daily Thermetrics	49	MECS, Inc.	9	Thermal Ceramics	57
Deloro Stellite	55	MOGAS Industries, Inc.	38	ThyssenKrupp Safway, Inc	48
Diamond Refractory Services	50	Nooter Construction Company	43	Total Safety U.S., Inc.	59
Everlasting Valve	27	Oakridge Bellows	63	Tracerco	17
Expansion Joint Systems, Inc.	45	Piping Technology & Products, Inc.	62	The Turnaround Management Co.	30
Fibercon International Inc.	6	Plant Performance Services LLC (P2S)	40	Turner Industries Group	34
Foster Wheeler USA Corporation	25	Refinery Technology, Inc.	14	United Laboratories International LLC	24
Grace Davison	22	REMOSA - UNITED VALVE	35	Wyatt Field Service Company	53
Haldor Topsoe, Inc. SCR Group	52	Resco Products, Inc.	4	Zimmermann & Jansen, Inc.	8
		Robert J. Jenkins & Company	61		

Aggreko (23)

15600 John F. Kennedy Blvd.
Suite 200
Houston, TX 77032
281-985-8287
Kimberly Dougherty
aggreko@aggreko.com
www.aggreko.com.northamerica
Aggreko is the global leader in rental power, temperature control, and oil-free compressed air systems. Aggreko provides 24/7 availability and service support from over 50 locations nationwide.

Albemarle Corporation (20)

2625 Bay Area Blvd.
Suite 250
Houston, TX 77058
281-480-4747
Jeffrey Oberlin
catmaster@albemarle.com
Boost yields and profit from your FCC unit and reduce SOx/NOx emissions with Albemarle, the world leader in FCC catalysts, additives and technical service.

All Tech Inspection (42)

2209 Market Street
Baytown, TX 77520
281-898-8360
Leo Poirier
lpoirier@alltechinspection.com
www.alltechinspection.com
Process safety management, maintenance outages, refractory inspection and testing and specialty nondestructive testing service.

AltairStrickland Group (1)

1605 S. Battleground Road
La Porte, TX 77571
281-478-6200
Whitney Strickland
wstrickland@altairstrickland.com
www.altairstrickland.com
AltairStrickland Group is a group of independent speciality contractors servicing the refining, petrochemical, power and paper industries.

Atlas Copco Prime Energy (12)

2306 S. Battleground Rd.
La Porte, TX 77571
281-542-2503
Jim Blohm
Jim.Blohm@us.atlascopcoprimeenergy.com
www.AtlasCopcoPrimeEnergy.com
Atlas Copco Prime Energy, your rental partner for portable, 100% oil-free continuous duty air compressors, air dryers, accessories and customized air solutions for emergency and temporary requirements.

BASF Catalysts LLC (44)

1111 Bagby Street
Suite 2600
Houston, TX 77002
713-795-3027
Teresa Garcia
teresa.garcia@basf.com
www.basf.com
BASF Catalysts LLC offers a full line of FCC catalysts and environmental and performance additives, along with unsurpassed service from the best team in the industry. BASF - The Chemical Company.

Belco Technologies Corporation (36)

9 Entin Road
Parsippany, NJ 07054
973-515-8903
Nicholas Confuorto
confuorto@belcotech.com
www.belcotech.com
A global leader in the licensing, design and supply of systems for reduction of refinery air pollutants including particulate, SO₂, SO₃ and NO_x. Reduction of emissions from FCCU regenerator, heaters, boilers and SRU.

BJ Process and Pipeline Services (32)

4101 Oates Rd.
Houston, TX 77013
281-519-2000
Jason Bordner
jason.bordner@bjservices.com
www.bjservices.com
Turnaround and pre-commissioning services to the petrochemical, power generation and refining industries.

Brand Energy and Infrastructure Services (29)

1325 Cobb International Dr.
Ste. A-1
Kennesaw, GA 30152
678-285-1400
Faran Latafat
faran.latafat@beis.com
www.beis.com
Brand provides scaffolding, insulation, industrial coatings, refractory and other related services for petrochemical/refining industries. Brand is highly regarded as the experienced, innovative, and commercially flexible service provider with award-winning safety performance.

Buell Div. Fisher-Klosterman (3)

200 N. Seventh St., Suite 2
Lebanon, PA 17046
717-274-7154
Joe Urban
jaut@fkinc.com
www.fkinc.com
Cyclone Systems for Fluid Cat Crackers & Petrochemical Reactors.

CAR-BER (56)

315 S Loop, Hwy. 146
Baytown, TX 77520
225-937-7376
James Phillips
jphillips@carbortesting.com
www.carbortesting.com
CAR-BER TESTING SERVICES is a company dedicated to providing specialty isolation and hydrotesting services to the oil & gas, petrochemical, power and pulp & paper industries. CAR-BER maintains a loss control program that meets the most stringent customer and industry environmental & safety standards.

Continental Fabricators, Inc. (7)

5601 West Park Avenue
St. Louis, MO 63110
314-781-6300
Alan Storm
astormcfi@hotmail.com
Fabricators of FCC unit air grids, riser lines, overhead and flue gas lines, steam rings, reactors, regenerators and stripper sections. Vessel fabricators, (heavy wall, clad, alloy, towers, drums). SRU vessels and components.

Daily Thermetrics (49)

5700 Hartsdale Dr.
Houston, TX 77036
713-780-8600
Walter Tijmes
tijmes@dailyinst.com
www.dailyinst.com
Daily Thermetrics' CatTracker® Catalyst Temperature Tracking System incorporates cutting-edge aerospace technology backed by over 30 years of experience to provide refiners with the best temperature profile possible for fixed bed reactor vessels.

Tabletop Exhibitors: Exhibitor List with Descriptions

Deloro Stellite (55)

471 Dundas Street East
Belleville, ON K8N 1G2 Canada
613-968-3481
Louw De Jong
ldejong@stellite.com
www.stellite.com

Deloro Stellite is a global supplier of high temperature wear, erosion, and corrosion components where longevity and performance are important. We offer tailored component solutions, a selection of application based alloys, the ability to select from eight casting processes, and full machining capability, all under one roof.

Diamond Refractory Services (50)

8431 Mosley
Houston, TX 77075
713-378-9200
David Gregory
dgregory@diamonddrefractory.com
www.diamonddrefractory.com

National FCCU turnaround specialist contractor. In-situ vibration casting of riser & feed sections. Complete vessel of segments pump. Casting. planning/scheduling/cost system. Diamond "Safety Certified" Staff craftsmen human resource data base. "Safety Rules!" Safety Program.

Everlasting Valve (27)

108 Somogyi Court
South Plainfield, NJ 07080
908-769-0700
David Jenkins
djenkins@everlastingvalveusa.com
www.everlastingvalveusa.com

Everlasting Valve Company developed the self lapping Flat Rotating Disc metal seated valve in 1911 to handle abrasive slurries. This concept was chosen State-of-the-Art lock hopper valve by DOE for the Clean Coal Technologies program, it is also included in "Best Practices" of a major petroleum refiner for Fluid Catalytic Crackers and Continuous Cat Reformers.

Expansion Joint Systems, Inc. (45)

10035 Prospect Avenue
Suite 202
Santee, CA 92071
619-562-6083
Larry Cejka
lcejka@ejsus.com
www.ejsus.com

EJS is a leading global expansion joint manufacture specializing in FCC applications. Our services include engineering and piping analysis, onsite inspection and installation including emergency services.

Fibercon International Inc. (6)

100 S. Third Street
Evans City, PA 16033
724-538-5006
Keith Foley
info@fiberconfiber.com
www.fiberconfiber.com
Steel fibers for refractory reinforcement.

Foster Wheeler USA Corporation (25)

2020 S. Dairy Ashford Road
Houston, TX 77077
281-752-3758
Paul Askins
paul_askins@fwhou.fwc.com
www.fwc.com
Engineering & construction company in the oil gas refining business offering feasibility studies, design packages, basic and detailed engineering, procurement, CM, project management, commissioning, start-up, training and fixed heaters.

Grace Davison (22)

7500 Grace Drive
Columbia, MD 21044
410-531-8260
Elizabeth Mettee
betsy.mettee@grace.com
www.gracedavison.com
Fluid cracking catalysts & FCC additives.

Haldor Topsoe, Inc. SCR Group (52)

17629 El Camino Real
Suite 300
Houston, TX 77058
281-228-5134
Dennis Salbilla
ds@topsoe.com
www.topsoe.com
Selective catalytic reduction catalyst manufacture and technology company.

Harbison-Walker (47)

1000 South Elmwood Dr
Mexico, MO 65265
573-582-1300 ext. 16
Mark Schnake
mark.schnake@hwr.com
www.hwr.com
Refractory material supplier to line cat crackers, SRV's, bailers, and oil heaters.

Hi-Tech Industrial Services, Inc. (16)

1310 Underwood Road
Deer Park, TX 77536
713-930-1460
Ken Shepherd
ken.shepherd@hi-techindustrial.com
www.hi-techindustrial.com
Specializing in all types of refractory installations including maintenance, turnarounds and capital projects; shop and field installations. New services include weld overlay, scaffolding erection, external insulation and abatement (API 936 certified).

Hotwork-USA (28)

223 Gold Rush Road
Lexington, KY 40503
859-276-1570
Donna Esson
hotwork@hotwork.com
www.hotwork.com
Refractory Dryout Services.

Industrial Gunite, Inc. (5)

2000 Magnolia Street
Pasadena, TX 77503
713-477-0331 ext.230
Bob Ferguson
bobferguson@gunite.net
Contractor providing refractory, fireproofing, acid proofing, support labor, and miscellaneous industrial services on a contract, turnaround, or run & maintain basis.

InServ-Integrated Service Co. LLC - A Willbros Company (51)

1900 N. 161st E. Avenue
Tulsa, OK 74116
918-234-4150
Gerald Schivally
gshivally@inservusa.com
www.inservusa.com
Inserv is a quality maintenance, turnaround and project service company available to refiners today including construction; heater revamps & design, maintenance, manufacturing services, tank services and turnkey project services.

INTERCAT (37)

2399 Hwy 34 South
Unit C1
Manasquan, NJ 08736
303-887-8196
Guido Aru
garu@intercatinc.com
www.intercatinc.com
INTERCAT is the leading supplier of FCC additives and related technologies worldwide.

JV Industrial Companies (31)

2221 Sens Road
La Porte, TX 77571
281-842-9353
281-471-9353
David Herzog
david.herzog@jvic.com
www.jvic.com
JVIC has evolved to become your turn key turnaround company by providing services in specialty welding, bolt torqueing, pipe fabrication, FCCU turnarounds, towers, exchangers, scaffolding, and engineering and procurement.

Lawrence Pumps Inc. (60)

371 Market St.
Lawrence, MA 01843
978-682-5248
Paul Griggs
pgriggs@lawrencepumps.com
www.lawrencepumps.com
Lawrence Pumps' extensive line of API-610 fully lined slurry pumps provide both improved reliability and a means to safely handle abrasive catalyst fines and coke at elevated temperature without pressure casing erosion.

M.E.A., Inc. (19)

2600 American Ln.
Elk Grove Village, IL 60007
847-766-9040
Marge Dombrowski
contact@meaincorporated.com
www.meaincorporated.com
Redundant digital controlled actuator for slide and plug valves used on FCCU's worldwide.

Matrix Service Company (41)

5100 E. Skelly Drive - Ste 700
Tulsa, OK 74135
918-838-8822
Danny Hales
dhales@matrixserviceinc.com
www.matrixservice.com
Full service contractor specializing in construction, repair, maintenance, and fabrication services for the refining and petrochemical industries. Services include turnarounds, industrial cleaning, plant maintenance, ASME repairs and modifications, electrical, instrumentation, fabrication and construction.

McJunkin Red Man Corporation (18)

835 Hillcrest Drive
Charleston, WV 25311
713-230-2795
Stuart Spears
sspears@mcjunkinredman.com
www.mcjunkinredman.com
McJunkin Red Man is an international distributor of industrial carbon, stainless, alloy and corrosion resistant pipe, valves, flanges, fittings, tubing, oil and gas supplies, valve automation, instrumentation, and steam products.

MECS, Inc. (9)

14522 S. Outer Forty Road
Chesterfield, MO 63017
314-275-5700
Andrea Trapet
andrea.c.trapet@mecsglobal.com
www.dynawavescrubber.com
MECS supplies the DynaWave Wet Gas Scrubber, which has been used by multiple refineries for high efficiency removal of SO₂, SO₃, and particulate from various flue gas streams (including FCCs).

MOGAS Industries, Inc. (38)

14330 E. Hardy Street
Houston, TX 77039
281-449-0291
Amril Lewis
mogas@mogas.com
www.mogas.com
MOGAS severe service, metal-seated ball valves range in size from ½" - 36" and are available in ASME 150 -4500 Pressure Classes. Unique material requirements available.

Nooter Construction Company (43)

1500 South 2nd Street
St. Louis, MO 63104
314-421-7600
Alan Yarosh
ahyarosh@nooter.com
www.nooterconstruction.com
Nooter Construction is an FCC Turnaround/Revamp expert. In addition Nooter services include refinery turnarounds, new equipment erection and capital project construction. Our subsidiary Delta Nooter provides exchanger services. We are known for customer satisfaction, safety performance and quality workmanship.

Oakridge Bellows (63)

190 S. Seguin St.
New Braunfels, TX 78130
830-626-7771
Greg Perkins
gperkins@oakridgebellows.com
www.oakridgebellows.com
Metal expansion joints.

Piping Technology & Products, Inc. (62)

3701 Holmes Road
Houston, TX 77051
713-731-0030
Joyce Stallings
joyce@pipingtech.com
www.pipingtech.com
Manufacturer of engineered pipe supports, constant & variable springs, fabricated shoe guides & anchors, slide plates, anchor bolts & embeds, pile launchers & receivers, ASME code vessels expansion joints and hardware.

Plant Performance Services LLC (P2S) (40)

One Fluor Daniel Drive
Sugar Land, TX 77478
281-263-1287
Jim Sorg
jim.sorg@p2sworld.com
www.p2sworld.com
P2S is a leading provider of specialty services including turnarounds, heat exchanger cleaning, electrical and instrumentation, fabrication, maintenance, boiler repair, construction and many others.

Refinery Technology, Inc. (14)

P.O. Box 680569
Houston, TX 77268
281-580-3773
Paul Klumpp
ptk@refinerytech.com
www.refinerytech.com
Expander installations (B.O. & T.), expander piping systems: design, troubleshooting, reliability audits, catalyst monitoring (real time). FCC unit systems: design, troubleshooting, reliability audits, spring support and expansion joint audits.

REMOSA - UNITED VALVE (35)

10010 Gulf Freeway
Houston, TX 77034
713-947-4526
William Cathriner
wcat20@swbell.net
www.remosa-valves.com
Repair FCCU slide, butterfly, diverter valves & internal parts. Supervise field repair & installation. Repair gate, globe and butterfly valves for refineries and petrochemical plants.

Tabletop Exhibitors: Exhibitor List with Descriptions

Resco Products, Inc. (4)

2-Penn Center West
Suite 430
Pittsburgh, PA 15276
440-725-0193
Allen Jurowski
allen.jurowski@rescoproducts.com
www.rescoproducts.com
Generations of innovations, meeting the demands of today's HPI market, as the supplier of technically advanced refractories.

Robert J. Jenkins & Company (61)

906 Medical Center Blvd.
Webster, TX 77598
281-332-2566
Tony Sims
tsims@rjjenkins.com
www.rjjenkins.com
The world leader in refractory project solutions since 1977. Consulting, inspection, testing and training.

Rotating Machinery Services, Inc (58)

2760 Baglyos Circle
Bethlehem, PA 18020
281-340-8520
Kurt Diekroeger
kdiekrieger@rotatingmachinery.com
www.rotatingmachinery.com
Rotating Machinery Services, Inc. provides a wide range of turbomachinery engineering, rerate, overhaul and field services to user of compressors, steam turbines, expanders and gas turbines.

Scaffolding and Shoring Services (54)

5900 West Baker
Baytown, TX 77520
281-459-1600
Chris Moody
cmoody@brockgroup.com
www.scaffoldingandshoring.com
XPS 60 the newest innovation in jig stands and heavy duty shoring.

Senior Flexonics Pathway (26)

2400 Longhorn Industrial Dr.
New Braunfels, TX 78130
830-629-8080 ext.632
David Peterson
dpeterson@pathwayb.com
www.myej.com
Engineered metal expansion joints for process piping applications, fabric expansion joints for flue gas ducting, damper products for control and isolation of flue gas and on-site-services for field servicing of expansion joint and damper products.

Shaw (13)

1430 Enclave Parkway
Houston, TX 77077
281-368-3772
Melissa Spradley
melissa.spradley@shawgrp.com
www.shawgrp.com
The Shaw Group is a leading global provider of technology, engineering, procurement, construction and maintenance service to the energy and chemical industry.

Stellar Materials / Thermbond (39)

7777 Glades Road
Suite 200
Boca Raton, FL 33434
561-330-9300
Ted Hagberg
info@thermbond.com
www.thermbond.com
Thermbond® Refractories are manufactured and distributed internationally by Stellar Materials Incorporated. Thermbond delivers unique bonding properties, including the ability to bind to existing substrates, fast dry-out, rapid heat up, and abrasion resistance insuring the strongest repairs and the fastest turnarounds.

Stress Engineering Services (33)

13800 Westfair East Drive
Houston, TX 77041
281-955-2900
Bobby Wright Jr.
bobby.wright@stress.com
www.stress.com
Stress Engineering Services, Inc. is an engineering consulting company founded in 1972. A full service, multi-discipline engineering firm committed to providing technical excellence to the upstream and downstream industries.

Structural Preservation Systems (46)

1003 Clay Court
Deer Park, TX 77536
281-478-5300
Amy Makris
amakris@structural.net
www.spsindustrial.com
Structural Preservation Systems is the nation's largest contracting firm dedicated to the repair, restoration, strengthening and corrosion protection of concrete and steel structures.

Stud Welding Association (21)

9324 Baythorne
Houston, TX 77041
713-939-9045
Gayle Dunn
gdunn@studwelding.com
www.studwelding.com
SWA offers a full line of refractory anchors – studs and SS fibers. Complete line of stud weld equipment.

Sulzer Chemtech USA, Inc. (10)

8505 E. North Belt Drive
Humble, TX 77396
281-441-5852
Kelvin Johnson
kelvin.johnson@sulzer.com
www.sulzer.com
Sulzer Chemtech USA, Inc.: the mass transfer expert in equipment and installation. Sulzer understands the sense of urgency to meet all your challenges. We offer a complete line of products and services – packing, trays, internals, and installation.

Superheat FGH Services (11)

1424 Sens Road
La Porte, TX 77571
888-508-3226
Mary Borrer
sales@superheatfgh.com
www.superheatfgh.com
Superheat is the world leader in on-site heat treatment and temperature control systems and services. Superheat FGH specializes in successful execution of large plant turnarounds, new plant construction, fabrication, and advanced nuclear "mega-projects".

TapcoEnpro International (2)

16315 Market Street
Channelview, TX 77530
281-247-8100
Lee Treichel
ltreichel@curtisswright.com
www.tapcoenpro.com
We offer single source solutions specializing in critical service valves, actuators/controls, vessels and related FCCU equipment. Our services include engineering, manufacturing and worldwide field service, focusing on turnkey customer support and satisfaction.

**Resco Products, Inc. –
Zimmermann & Jansen, Inc.**

Team Industrial Services, Inc. (15)

200 Hermann Drive
Alvin, TX 77511
281-338-5545
Russ McAfee
rmcafee@teamindustrialservices.com
www.teamindustrialservices.com

Team provides industry with on-stream leak sealing, hot tapping, line freezing, field machining, mobile machine shops, field heat treating services and equipment, technical bolting, emissions control (LDAR), NDE/NDT/inspection programs and turnaround services.

Thermal Ceramics (57)

2102 Old Savannah Road
PO Box 623,30903
Augusta, GA 30906
706-796-4313
Wendy Evans
wevans@thermalceramics.com
www.thermalceramics.com

Thermal Ceramics is a worldwide leader in refractory and insulation technology. We can provide the global petrochemical market engineered product solutions for reducing energy and maintenance costs.

ThyssenKrupp Safway, Inc (48)

N19 W24200 Riverwood Dr.
Waukesha, WI 53189
262-523-6525
Robert Viscomi
marketing@safway.com
www.safway.com

With more than 80 North American locations, ThyssenKrupp Safway, Inc. has been a leader in scaffold services since 1936, offering scaffold rental, sales, labor, engineering, training and project management assistance.

Total Safety U.S., Inc. (59)

1111 Wilcrest Green Dr.
Houston, TX 77042
218-867-2351
Libby Machalicek
lmachalicek@totalsafety.com
www.totalsafety.com

Total Safety is the leading provider of integrated safety strategies and the products necessary to support them. Our Mission: To ensure the safe wellbeing of workers worldwide.

Tracerco (17)

4106 New West Drive
Pasadena, TX 77507
281-291-7769
Chris Scheffler
chris.scheffler@tracerco.com
www.tracerco.com

Tracerco, a global organization, provides process diagnostics and specialty measurement instrumentation for the process industry to optimize production, troubleshoot operations, and minimize shutdown periods to reduce your operating costs and maximize your profits.

The Turnaround Management Co. (30)

17629 El Camino Real
Suite 125
Houston, TX 77058
281-956-5710
Mike Bischoff
frinsco@tamanagement.com
www.tamanagement.com

TTMC provides project controls support services for turnarounds and capital projects. We apply industry specific processes and tools and integrate with owner/operator systems to provide a more predictable and favorable outcome.

Turner Industries Group (34)

8687 United Plaza Blvd.
Baton Rouge, LA 70809
225-214-2472
Lewis Paxton
lpaxton@turner-industries.com
www.turner-industries.com

Turner Industries Group has provided a single vendor solution in maintenance, turnarounds, construction and industrial services for 50 years. Turner is ranked as one of the nation's top refinery contractors.

United Laboratories International LLC (24)

1206 N Highway 81
Suite 26B
Duncan, OK 73533
580-252-8500
Susan Moore
susan.moore@zymeflow.com
www.zymeflow.com

Specializing in process unit decontamination, United Laboratories International, LLC Zyme-Flow® chemistry provides a unique and versatile process for quickly and safely decontaminating process equipment.

Wyatt Field Service Company (53)

10810 West Little York Rd.
#130-A
Houston, TX 77041
713-570-2000
Kenny Goodgame
sales@wyattfieldservice.com
www.wyattfieldservice.com

Wyatt performs constructability reviews relating to the planning and execution of FCCU turnarounds whose scope is comprised of routine maintenance and major revamps; including "head offs" on both the regenerator and reactor.

Zimmermann & Jansen, Inc. (8)

620 North Houston Ave.
Humble, TX 77347
281-446-8000
Michael Lemeshev
m.lemeshev@zjinc.com
www.zjinc.com

Engineering, manufacturing & field service for high temperature, large diameter, sever service FCCU slide, isolation, butterfly & diverter valves; coker top & bottom deheading valves, ethylene and other special valves. ISO 9001:2000 & ASME Code Certified.



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National Petrochemical & Refiners Association

1667 K Street, N.W.
Suite 700
Washington, D.C.
20006

202.457.0480
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