INTRODUCTION

For over 30 years Refining Process Services has provided engineering technical services and conducted specialized training programs for the worldwide petroleum refining industry. This brochure presents information on our "Basics of Petroleum Refining for Non-Technical Personnel" program which has been designed for those who do not have technical backgrounds and who do not work in a technical capacity. The course program will be presented in layman’s language by an experienced petroleum refining industry professional. Time has been set aside in the program for questions and discussion of topics of interest to participants.

PROGRAM

The program content focuses on the basic definitions of petroleum refining with a brief explanation of crude oil chemistry and the impact on the refinery, and a fundamental discussion of the nature and purpose of the major refining processes. In addition, the characteristics of refinery products will be explored. Finally, the basic economics associated with refining and the effects of recent environmental regulations on product processing will be examined. The sessions will be presented by a knowledgeable, experienced industry professional who is well-versed in all of the major processing areas of petroleum refining.

This program has been designed for non-technical personnel assigned to positions in petroleum refineries, corporate offices, and supplier companies. The content of the program is based upon the assumption that those in attendance do not have a formal education in engineering and chemistry and do not work in highly technical environments. Attendance at this course will be beneficial to support personnel such as environmental professionals, accountants, business managers, administrative and legal staff, sales and marketing personnel, insurance representatives, personnel managers, financial professionals, and government officials. The program should also be useful for newly-hired refinery plant operators. Finally, the course may serve as preparation for those who do not have a technical background but who want to attend the more detailed “Introduction to Petroleum Refining Processing” program offered by Refining Process Services.

PROGRAM OUTLINE

1. Characteristics of Crude Oil
   • Composition
   • Description of Crude Oil Fractions
   • Definition of Physical and Chemical Processes

2. Fundamentals of Petroleum Chemistry
   • Description of a Hydrocarbon Molecule
   • Types of Hydrocarbon Molecules
   • Definition/Function of a Catalyst

3. Fundamentals of Crude Oil Distillation
   • Description of the Distillation Process
   • Cut Points of the Various Fractions

4. Basic Refinery Flow Configuration and Auxiliary Processes
   • Refinery Flow Scheme
   • Gasoline Processing Options
   • Heavy Oil Processing Options
   • Auxiliary Refinery Processes: Gas Plant, Sulfur Recovery, etc.

5. Product Blending and Usage
   • Gasoline Properties and Blending
   • Distillate Fuels: Heating Oil, Diesel, Jet Fuel
   • Residual Materials: Bunker Fuel, etc.
   • Lube and Specialty Products

6. Descriptions of the Gasoline Production Processes
   • Catalytic Reforming
   • Isomerization
   • Fluid Catalytic Cracking
   • Alkylation

7. Fundamentals of Hydroprocessing
   • Hydrotreating
   • Hydrocracking

8. Options for Heavy Oil Processing
   • Delayed Coking
   • Solvent Deasphalting
   • Visbreaking
   • Residual Oil Hydroprocessing
   • Lube Oil Processing

9. Structure of the Petroleum Refining Industry
   • Basic Petroleum Refining Economics
   • Impact of Gasoline Specifications on Refinery Operations
   • Use of Ethanol
   • Overview of the U.S. Refining Industry

10. Review of Key Refining Definitions

Open Forum Discussion
Robert J. Campagna is the Director of Technical Services and one of the principals of Refining Process Services. He is currently involved in catalyst evaluation studies, refining industry technical service, and training program presentations for the company. Bob was previously employed by Filtrol Corporation where he provided technical and marketing support for Filtrol's fluid catalytic cracking catalysts. He also spent 10 years with the Gulf Oil Corporation where he made significant contributions in the areas of hydrotreating, catalytic reforming, and fluid catalytic cracking technical service. Bob is a leading independent consultant in the field of fluid catalytic cracking and has presented numerous technical seminars throughout the world. He holds B.S. and M.S. degrees in Chemical Engineering from the University of Pittsburgh.

Warren S. Letsch is an independent consultant with an extensive FCC background. His prior employment was with Stone & Webster, Inc., a Shaw Group Company, where he was responsible for FCC/DCC technology and business development, and with Refining Process Services where he was involved in licensing of the MagnaCat® Process. He was also Director of Worldwide Sales and Marketing for UOP/Katalitikas. He has had experience with Total Petroleum as Manager of Refining Technology and with Davis Oil and Shell Chemical in research, marketing, and technical support of petroleum catalysts. Warren has authored numerous articles on refining technology and holds seven US patents in the FCC area. He holds B.S. and M.S. degrees in Chemical Engineering from the Illinois Institute of Technology.

The program will be presented at the Hyatt Regency North Houston in Houston, Texas. The hotel is located off Beltway 8 (North Loop) at the Imperial Valley Road Exit, and is a 15-minute drive from the Houston Intercontinental Airport. A block of rooms at special rates has been reserved at the hotel for program participants. Room reservations should be made on our website at www.petroleumrefining.com by clicking on “Seminar Registration,” and selecting the program you will be attending. You can also contact the hotel Group Reservations Desk at (281) 249-1234. Please indicate at the time you make your room reservations that you will be attending this Refining Process Services function. We suggest that you make room reservations as soon as possible but no later than February 8, 2016, to get the function room rate and assure your accommodations. Room reservations can be made after this date, but availability and room rate cannot be guaranteed. Hotel information is available on our website at www.petroleumrefining.com.

This program will begin promptly at 8:00 AM in a meeting room at the hotel. The sessions will be completed by 4:30 PM. A deluxe Continental Breakfast will be available at 7:15 AM the day of the program. Breakfast, beverage breaks, and lunch are included in the fee.

Refining Process Services offers this course program for in-house presentation. You can have your employees attend the program at your location, saving time, and eliminating hotel and travel expenses incurred when your personnel attend public courses. Please contact Mr. Bob Campagna at 412-826-5440 for more information.

The Early Registration Fee of US$695.00 is payable in U.S. funds via your company’s check drawn on a U.S. bank, an international money order, bank wire transfer, or credit card. To be invoiced or to pay by credit card, you must register on-line at www.petroleumrefining.com. If the registration fee is received after January 26, 2016, the Regular Rate Fee of US$795.00 is due, so please register early. Fee includes all program materials, Continental Breakfast, lunch, and beverage breaks. Lodging is not included and should be handled directly with the hotel. Please note that fee must be paid in advance of program start date in order to hold space. You can forward the form shown below or a copy with a check made payable to: REFINING PROCESS SERVICES, INC., Suite One, 1708 Pittsburgh Street, Cheswick, PA 15024 USA.

Please forward your mailing and e-mail addresses if you wish to be in our contact data base.