

**Course Content****Title:** Catalytic Reforming Process Technology**Potential PDH:** 24**Code:** BTT041**Description:**

The catalytic reforming process is critical to the overall economic balance of the modern petroleum refinery. This program has been developed to provide an in-depth, yet practical review of the current technology available in the processing areas of catalytic reforming and naphtha pretreating. The speakers will cover topics ranging from the basic process chemistry through commercial unit operations. The interactions between feedstock types, yields, product quality, catalysts, cycle length, and operating process variables will be explained. In addition, unit monitoring, troubleshooting, catalyst regeneration, and process evaluation methods will be discussed. A thorough understanding of these principles and techniques is necessary to optimize the performance of the catalytic reformer and, ultimately, to maximize the profitability of the unit.

**Outline:**

## INTRODUCTION TO CATALYTIC REFORMING

- Process History
- Position in Refining Process
- Process Overview
- Process Types
- Evolution to Moving Bed

## REFORMING CHEMISTRY AND CATALYSTS

- Reaction Chemistry
- Metal/Acid Catalyst Functions

## REFORMING FEED AND PRODUCTS

- Feed Sources and Quality
- Reformate Product Quality
- Net Gas Product Quality

## REFORMER PROCESS TECHNOLOGIES

- Semi-Regenerative
- Cyclic Regeneration
- Continuous Regeneration

## REFORMING PROCESS EQUIPMENT

- Reforming Equipment
- Regeneration Equipment

## REFORMING PROCESS VARIABLES

- Process Variables: Severity, Pressure, H<sub>2</sub>/HC Ratio, LHSV, Feed, Catalyst
- Effect of Variables on Yields, Activity, Catalyst Stability and Product Quality

## REFORMER MONITORING

- Parameters to Monitor
- Water/Chloride Balance

## REFORMER TROUBLESHOOTING

- Low Reformate RON
- Catalyst Performance

## Course Content

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- Catalyst Sampling
  - Water/Chloride Balance
  - Feed Contaminants
- REFORMING PROCESS SAFETY  
NAPHTHA HYDROTREATING
- Chemistry and Catalysts
  - Process Flow
  - Process Variables
  - Process Safety

### Instructor:

Brad Palmer has 32 years' experience in the oil and gas industry and has held engineering and leadership roles in both technical and operations. He started in oil and gas production but soon transferred to refining where he spent the rest of his career, working for Chevron, Conoco, ConocoPhillips and Phillips 66. For the first 9 years he held process engineering roles for Chevron in environment, hydrotreating, blending and shipping, crude units, cokers, utilities, FCCs, planning and economics and operations coordination. Joining Conoco as a lead engineering in their central technology group, Brad worked across technologies then settled into a technical leadership role in Reforming and Isomerization for 17 years. He spent his last 5 years as a Process Engineering Superintendent in the Alliance refinery leading both project and process engineering teams.

Working in both technology development and operations organizations for ConocoPhillips and Phillips66, Brad's career was focused on process training, troubleshooting, unit monitoring and optimization, best practice development, reliability improvement, process safety standards, project development, turnaround support, catalyst testing, and technology development.

Brad has been working as a Becht Engineering Process Technology Advisor for over one year. He holds 8 patents.