

**Training Title**

**CONTINUOUS CATALYTIC REFORMER (CCR)**

**Training Duration**

**5 days**

**Training Venue and Dates**

<b>PE134</b>	<b>Continuous Catalytic Reformer (CCR)</b>	<b>5</b>	<b>07-11 Oct, 2024</b>	<b>\$5,500</b>	<b>Dubai, UAE</b>
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**In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.**

**Training Fees**

- **\$5,500** per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

CRU Training, Catalytic Performing Unit (CRU) Process Training covers the catalytic reforming unit process concepts and operations. CRU is critical to the overall economic balance of the modern petroleum refinery. CRU training course has been developed by TONEX to provide an in-depth, yet practical overview of the current technology available in the processing areas of catalytic reforming and Naphtha pre-treating.

CRU training course 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, CRU operation, and process evaluation methods will be discussed.

**TRAINING OBJECTIVES**

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.

**WHO SHOULD ATTEND?**

This program has been designed for refinery staff involved in catalytic reforming unit operation, process engineering, and unit monitoring. The program will also benefit process R & D personnel, as well as sales and technical service engineers from catalyst suppliers.

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Personnel from design and construction companies, process control vendors, and refining equipment suppliers will also find the program beneficial. Participants are invited to bring questions and any non-proprietary operating experiences for discussion during the program and the open forum sessions which are scheduled at the end of each day.

**TRAINING METHODOLOGY:**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of the multiple-choice type will be made available on a daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

**DAILY OUTLINE**

**Day – 1**

**INTRODUCTION TO CATALYTIC REFORMING UNIT (CRU)**

- What is CRU?
- Process History
- Position in Refining Process
- Unit Designs
- Reactor Designs
- Review of Licensed Processes
- Reaction Chemistry
- Metal/Acid Functions

**REFORMING PROCESS VARIABLES**

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

**Day - 2**

**REFORMER OPERATING SCHEMES**

- Unit Optimization
- Aromatics Production
- Revamp Options
- Continuous Reforming
- Reformulated Gasoline Options
- Energy Conservation

## REFORMING CATALYSTS

- Catalyst Composition and Types
- Commercial Catalysts
- Evaluation of Catalyst Changeout
- Role of Sulfur in Reforming
- CRU Operation

### **Day - 3**

#### REFORMING CATALYST UNIT PROCEDURES

- Unit Start-Up
- Catalyst Regeneration

#### REFORMER MONITORING

- Feed/Catalyst Sampling and Analyses
- Data Normalization
- Catalyst Samplers

### **Day - 4**

#### CONTINUOUS CATALYTIC REGENERATION

- CCR Unit Operation
- Advantages/Disadvantages
- CRU normal startup and shutdown, as well as emergency shutdown procedures and key points/ best practices in operation.

### **Day - 5**

#### REFORMER TROUBLESHOOTING

- Problem diagnosis
- Troubleshooting
- Monitoring and evaluation of compressor operation.
- Performance Evaluation
- Operating Variable Effects
- Water/Chloride Balance
- Feed Contaminants
- Catalyst Problems
- Optimization of condensate & gas production
- Reduction of flaring

#### NOTE:

**Pre & Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**

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