

# ENVIRONEX NOX AND CO/VOC CONTROL SHORT COURSE



## COURSE DESCRIPTION

This intensive two-day course introduces participants to all the important scientific, engineering, and operating aspects of Selective Catalytic Reduction (SCR) and CO/VOC oxidation catalyst systems. Dual Function catalyst will also be covered. The course focuses on the commercial and practical experience of these technologies and their operators and suppliers. This information is essential in formulating and evaluating control strategies and control system designs. The instructors have firsthand experience in designing, troubleshooting, and servicing NOx and CO/VOC control units for gas turbines, utility boilers, IC engines, and oil-fired heaters. Their experience in Process Design, Control Systems, Reaction Engineering and Catalysis covers several decades.

## LOCATION

The course will be held on September 20 & 21, 2022 at the Courtyard Long Beach Downtown in Long Beach, California.

## WHO SHOULD ATTEND

The course is designed for engineers, managers and professionals who need to make decisions about:

- SCR and CO/VOC System Design and Maintenance
- Dual Function Catalyst Design
- Emission Control Strategies / Fast Start Systems
- BACT Analysis / Risk Analysis
- Integrated Boiler-SCR Design
- Emission Control Investment
- Catalyst Life Cycle
- Plant Operation & Maintenance
- Commercial Suppliers of NOx and CO Control Equipment
- New Construction and Retrofit Process Economics
- Hydrogen Fuel Blending Impact on NOx Emissions
- Continuous Emission Monitoring

## INSTRUCTORS

Daniel Ott, President of Environex, Inc., is an expert with over 30 years of experience in Post Combustion NOx and CO/VOC control, including Selective Catalytic Reduction (SCR) system design, maintenance, and troubleshooting for all fuel types. He holds a Master's degree in Chemical Engineering from Villanova University.

Andrew Toback, Project Manager at Environex, has over 20 years of experience in the field of air pollution control from combustion sources. He has expertise with combustion turbines, boilers, and IC engines. Mr. Toback holds a Master's degree in Chemical Engineering from Rowan University.

## PROGRAM

- NOx/CO Regulations - How they affect emission control strategy
- Combustion Technology
- Catalytic Chemistry - Activity, Selectivity, Kinetics
- Catalyst Evaluation - Testing Apparatus, Sampling, Testing Guidelines
- NOx/CO Control Process Variables
- Activity Maintenance - Modes of Deactivation
- Commercial Catalysts - Manufacturers
- Physical Properties
  - Geometric Surface Area and Pressure Drop
- Reactor Design - Configuration Options, Flow Velocity, Gas Mixing, Module Design
- Reactor Performance - Variable Effects
- Catalyst Replacement Strategies
- Examples - Gas Turbine and Utility Boilers
- Reactor Design Guidelines
- SCR Process Design
  - The Ammonia Injection System
  - Injection Controls and Emission Monitoring
- Design Considerations for
  - SCR Catalyst and Housing
  - CO Catalyst and Housing
  - Ammonia Dilution and Delivery System
  - Ammonia Injection Grid
  - System Control
- Oxidation Catalyst Chemistry, Design, and Operation
- Gas Sampling System
- Monitoring Equipment

## ENVIRONEX, INC.

Environex offers technical, planning, testing, engineering, research and training services to companies and organizations concerned with air emissions control. We offer cost effective solutions to air emission problems by working with clients to:

- Train staff in state-of-the-art control technologies
- Plan cost effective emission control strategies
- Design advanced emission control systems
- Optimize operating efficiency and cost
- Analyze operating data for problem resolution
- Access technology experience worldwide

To register for the course or request additional information about our services, please contact  
Environex, Inc. • 1 Great Valley Parkway Suite 4, Malvern, PA 19355  
Tel (484) 320-8608 • Fax (484) 320-8639 •  
E-mail: [info@environex.com](mailto:info@environex.com) • environex.com

# Environex NO<sub>x</sub>/CO Control Course - Registration Form



## REGISTRATION

**Course:** Industrial NO<sub>x</sub>/CO Control

**Date:** September 20th & 21st, 2022

**Place:** Courtyard Long Beach Downtown  
500 East First Street  
Long Beach, CA 90802

**Cost:** \$990.00 (through September 2nd)  
\$1,190.00 (after September 2nd)

- Please enroll me and hold a space
- Payment enclosed
- Bill me via PayPal (email required)
- I cannot attend, send me your next announcement

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Division \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip Code \_\_\_\_\_

Tel \_\_\_\_\_

Fax \_\_\_\_\_

E-mail \_\_\_\_\_

## LOGISTICS

### Course Information:

The course runs from 8:30 a.m. to 4:30 p.m. both days and includes course materials and lunch.

The course will be held at the Courtyard Long Beach Downtown. Dress is casual. Directions to the hotel will be provided upon receipt of your registration.

### Accommodations:

Reservations can be made by contacting Marriott Reservations and identifying yourself as part of the Environex Industrial NO<sub>x</sub> Control Course group. Rooms are available at the Environex rate of \$199 per night plus applicable taxes and fees. Cut off for reservations at the group rate is Monday, August 22, 2022.

Marriott Reservations: (800) 321-2211  
(562) 435-8511

### Payment:

Payment by check or PayPal is required before the course. Credit cards are accepted through PayPal only. There is a \$150 cancellation charge to cover administrative costs, which may be applied to a future course. You may send a substitute attendee if we are notified at least one week prior to the program.

### Mail, fax or email registration to:

**ENVIRONEX, INC.**  
**1 Great Valley Parkway Suite 4**  
**Malvern, PA 19355**  
**Tel: (484) 320-8608**  
**Fax: (484) 320-8639**  
**Info@environex.com**

For more information about Environex and our services, visit  
**environex.com.**