

# ENVIRONEX NOX 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 Non-Catalytic Reduction (SNCR) of NO<sub>x</sub>, as well as NO<sub>x</sub> Combustion Control Technologies. CO and VOC oxidation catalysts are also 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 NO<sub>x</sub> control strategies and NO<sub>x</sub> control system designs. The instructors have firsthand experience in designing, troubleshooting and servicing NO<sub>x</sub> control units for gas turbines, utility boilers and oil fired heaters. Their experience in Process Design, Control Systems, Reaction Engineering and Catalysts covers several decades of NO<sub>x</sub> control technology.

## LOCATION

The course will be held at the New Orleans Marriott in the historic French Quarter.

## WHO SHOULD ATTEND

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

- SCR System Design and Maintenance
- Emission Control Strategies / Fast Start Systems
- BACT Analysis / Risk Analysis
- SCR, SNCR, Low NO<sub>x</sub> Burner Technology
- Integrated Boiler-SCR Design
- Emission Control Investment
- Catalyst Life Cycle
- Plant Operation & Maintenance
- Commercial Suppliers of NO<sub>x</sub> Control Equipment
- New Construction and Retrofit Process Economics
- Continuous Emission Monitoring

## INSTRUCTORS

Daniel Ott, President of Environex, Inc., is an expert in Post Combustion NO<sub>x</sub> and CO control with extensive experience in Selective Catalyst 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 19 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

- NO<sub>x</sub> Regulations - How they affect emission control strategy
- Combustion Technology
- Catalytic Chemistry - Activity, Selectivity, Kinetics
- Non-Catalytic Reduction of NO<sub>x</sub>
- Catalyst Evaluation - Testing Apparatus, Sampling, Testing Guidelines
- NO<sub>x</sub> Control Process Variables
- Activity Maintenance - Modes of Deactivation
- Commercial SCR 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
  - 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  
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