

H S E

HEALTH

SAFETY

ENVIRONMENT



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Air Emission Management Workshop

Duration: 5 Days



Introduction:

Industry will be facing increasingly stringent requirements to reduce air emissions to meet current regulations and the increasing pressure coming from enhanced public awareness on Global Warming. What will be the new requirements and what should we be doing now

is the focus of the Five-day workshop which brings together industry, environmental consultants, and the regulators to envision the upcoming requirements for the different industries, the available technologies and their best use with the objective of increasing industry's preparedness to face the impending changes. By taking part in this workshop, you will enhance your understanding of the potential regulatory compliance requirements to implement the emission reductions.

Who Should Attend?

- Plant managers
- facility engineers
- environmental and engineering consultants

- EHS managers and staff
- facility operators
- regulatory personnel
- environmental scientists

Course Objectives:

By the end of this course delegates will be able to:

- apply prevention and control techniques with a thorough understanding of the emission formation process
- evaluate the effectiveness and select the most suitable emission reduction system for your requirements with the knowledge gained at the conference
- reduce cost by using the critical points in inspecting an emission control system for compliance with the required standards
- make assessment of the effectiveness of alternate technologies, plans, and specifications
- use effective methods for installation of emission reduction and control technologies already proven successful by others

Course Outline:

- Regulation related to air emissions
- Permitting and projects
- Emissions measurement and calculation
- Impact assessment – monitoring and modelling
- Estimation and reporting of GHGs
- Emission control system design
- Case studies

Module I

Introduction, Workshop Preview, Learning Outcomes and Assessment method

Regulation – Air Quality and Chemicals Management

- Introduction
- Air aspects of the Canadian Environmental protection Act
- Issues in Environmental Assessment
- Environmental emergencies and chemicals management
- Annual reporting requirements – NPRI
- The Federal Air Quality Management System (AQMS)
- Air standards and Base Industrial Limits (BLIERS)
- Airsheds and air monitoring

Permitting and Projects – Air Emissions Requirements

- Existing provincial regulations: triggers for assessment and approval
- Agency and sector requirements
- Standards and best practices
- Emission limits, notification requirements, compliance plan/schedule
- Technical requirements for assessment and approvals
- Codes of practice
- Air-related directives and guidelines
- Permit conditions, reporting
- Case Study

Emissions Measurement I - Source testing

- Equipment and Methods
- Problems and pitfalls
- Planning and reports
- Uncertainty

Emissions Measurement II - Continuous emissions monitoring (CEM) systems

- Installation and performance
- Data management and reports
- Audit and calibration
- RATA
- Missing data

Emissions Calculation

- Estimation methods and relative accuracy
- Emission factors – published and plant
- Mass balance
- Process methods - mass flow calculation
- Uncertainty

Group Exercises

Module II

Issues in Impact Assessment

- Impact standards
- Cumulative effects
- Factors affecting air emissions transport
- Deposition

Ambient Air Quality Monitoring

- Baseline data
- Sampling protocols
- Equipment
- Calibration and maintenance
- Data QA/QC
- Group Exercise – Ambient Monitoring

Modeling Air Quality

- Concepts in air dispersion modeling
- Screening and detailed Models
- Introduction to AERSCREEN, AERMOD and CALPUFF
- Input requirements

Dispersion Modeling

- Use of models in basic scenarios
- Regulatory guidance
- Setting up the model
- Problems and pitfalls
- Case study

GHG Assessment

- Standards and protocols
- GHG quantification methodologies
- Fuels and feedstocks
- Verification

Emissions Reporting

- Requirements for reporting
- Methods for Information Management

Module III

Emissions Reduction and Control

- What drives the level of reduction
- Pollution prevention
- Toxics removal and reduction requirements

Integrating Emission Control Design

- Choosing a control technology
- BACT/MACT assessment process
- Effective emissions capture and transport
- Fans and exhaust system design considerations

Issues around Particulate

- Particulate sizing and its impact on control
- Dealing with fine particulates
- Control efficiency
- Secondary particulate
- Control systems selection
- Operations issues
- Fugitive dust
- Case study

Combustion and Combustion Gases

- Aspects of combustion
- Fuels
- Combustion Gases (NO_x, SO₂ and CO)
- Emissions controls

- Hybrid control systems
- Mercury, dioxins and furans
- Case study

VOCs and Odour

- **Types of sources**
- Drivers for choice of control system
- Design parameters
- Control systems and selection
- Odor Episodes
- Regulation
- Assessment and management
- Case study
- Final Discussion and Closure