MTBM

CONTINUOUS ENVIRONMENTAL MONITORING SYSTEM (CEMS) TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

Level 8, MCT Tower, Sky Park, One City, Jalan USJ 25/1, 47650 Subang Jaya, Selangor

+603 8022 8330 +603 8022 8201 info@mtbmgroup.com mtbmgroup.com

Course Title: Continuous Environmental Monitoring System (CEMS) Training

Course Validity: 2 Days

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION

This training provides participants with a complete understanding of Continuous Environmental Monitoring System (CEMS) requirements, system components, operation, calibration, data accuracy, and reporting obligations. It covers Malaysian legal requirements under the Environmental Quality Act 1974 and Environmental Quality (Clean Air) Regulations 2014, as well as Department of Environment (DOE) guidelines for performance, certification and data submission. Participants will learn the technical and practical elements of installing, operating, maintaining and troubleshooting CEMS to ensure compliance and reliable emission monitoring at the facility level.

OBJECTIVE(S):

- Understand the purpose and functions of CEMS in industrial emission monitoring.
- Identify CEMS components, technologies and measurement principles.
- Understand DOE requirements for CEMS installation, certification and operation.
- Apply correct procedures for calibration, maintenance and quality assurance.
- Monitor and interpret CEMS data for compliance and performance analysis.
- Handle alarms, system faults and troubleshooting scenarios.
- Prepare CEMS documentation and reporting for regulatory compliance.
- Strengthen organisational capability in continuous environmental monitoring.

TARGET GROUP(S):

- Environmental Officers and Executives
- CEMS Operators and Monitoring Personnel
- Facilities, Engineering and Maintenance Teams
- Safety, Health and Environmental Practitioners
- Supervisors and Managers involved in emission compliance
- Anyone responsible for air emission monitoring and reporting

ENTRY REQUIREMENT(S):

- Able to read, write and communicate verbally in Malay/English

TOPIC(S):

1. Introduction to CEMS and Environmental Monitoring
2. Legal Requirements: EQA 1974, Clean Air Regulations 2014 and DOE CEMS Guidelines
3. CEMS Components and Measurement Principles
4. Types of Monitoring Technologies (PM, SO_2, NOx, CO, O_2, Flow, Opacity)
5. CEMS Installation, Certification and Performance Specification Requirements
6. Calibration, Zero and Span Checks and Quality Assurance Procedures
7. CEMS Data Acquisition, Validation and Reporting
8. Troubleshooting, Fault Handling and Preventive Maintenance
9. CEMS Integration with Process Control and Environmental Management
10. Case Studies, Practical Simulation and System Review

LIST OF REFERENCE BOOK(S):

- Environmental Quality Act 1974
- Environmental Quality (Clean Air) Regulations 2014
- DOE CEMS Technical Guidelines
- ISO 14001:2015 (Monitoring and Measurement Requirements)
- International CEMS Standards (US EPA, EN Standards)

LIST OF TEACHING AID(S):

- LCD projector
- CEMS component diagrams and flow schematics
- Calibration tools (demo basis)
- Case study worksheets
- Flip chart or whiteboard

METHODOLOGY(S):

- Interactive lecture
- Group discussion
- Case studies
- Demonstrations
- Scenario-based activities

TRAINING SCHEDULE

Day 1

Time	Activity / Topic
8:30 am – 9:00 am	Registration and Introduction
9:00 am – 10:15 am	Topic 1: Introduction to CEMS and Monitoring Principles
10:15 am – 10:30 am	**Morning Tea Break**
10:30 am – 12:30 pm	Topic 2–3: Legal Requirements and CEMS Components
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 3:30 pm	Topic 4: Monitoring Technologies and Measurement Principles
3:45 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Topic 5: CEMS Installation and Certification Requirements

TRAINING SCHEDULE

Day 2

Time	Activity / Topic
8:30 am – 9:00 am	Recap of Day 1
9:00 am – 10:15 am	Topic 6: Calibration, Zero and Span Checks
10:15 am – 10:30 am	**Morning Tea Break**
10:30 am – 12:30 pm	Topic 7–8: Data Validation, Reporting and Troubleshooting
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 3:30 pm	Topic 9: CEMS Integration with EMS and Process Controls
3:45 pm – 5:00 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Topic 10: Case Studies, Simulation and Final Review