1. Course Details:

Course Code : ICPE-010
Course Title : Distributed Control Systems (DCS)
Course Duration : 5 Days

2. Course Overview:

- System integration are blurring the lines between distributed control systems (DCS) and supervisory control and data acquisition (SCADA). To complicate matters, some vendors position their products either as DCS or SCADA depending upon the actual application. This course has been designed with these recent trends in mind while covering the most important components of a DCS in detail. Emphasis is placed on DCS operation, networking, HMI, and Alarms. Topics of importance to field Engineers and Operators such as Maintenance and Troubleshooting are covered.

3. Learning Outcomes:

- Review sensors, instrumentation, and process control
- Cover DCS Organization and operation
- Summarize the most important Networking, HMI, and Alarm features of DCSs
- Highlight Maintenance and Troubleshooting procedures and issues
- Review Advanced Process Controllers in DCSs
- Cover Latest trends related to DCSs

4. Course Contents:

- Review of sensors, instrumentation, and process control systems
- Control Algorithms
- Distributed Control Systems: Introduction
- Overview, Features, Advantages, where used
- Functions, Architecture, I/O, components,
- Hardware, software, system interfacing
- Programmable Logic Controller (PLC) – brief overview
- supervisory control and direct digital control
- Supervisory Control and Data Acquisition (SCADA) – brief overview
- DCS Configuration and Networking
- Distributed Control Systems: Structure and Configuration
- DCS block diagrams, components, architecture, redundancy concepts
- DCS hardware configuration

- DCS Hardware & Software Internals
- Basic DCS Controller Configuration
- Sequential Controllers for Batch Processing
- Controllers for Continuous Processes: Function Blocks
- Hierarchical Structure of control systems: ISA-95
- Data Communications and Networking
- Signal Transmission
- Physical Network Structures
- Logical Network Structures
- Communication Standards
- Wide Area Network (WAN) communications: Modbus
- Control in the Field (CIF)
- DCS applications and case study (Oil & Gas)
- Plant mimic and animation
- DCS Operator Stations
- Recorders, Loggers, Trend Displays, and Data Archiving
- Alarm System Functions
- Development and Applications, Logs, trends and reports
- DCS Operation
- Operational view of DCS
- Role of operators
- Integration and Optimization of DCSs
- DCS Configuration
- DCS Integration
- Maintenance and Troubleshooting
- Proper troubleshooting methods
- Advanced Process Controllers
- Basics of advanced process control and optimization
- Latest DCS Trends

5. Our Methodology:

- Make coaching and monitoring innovative and using modern
- Media training also using on the go training by using interactive means and focusing on
- The exercises, practical applications and real situations study.
- Live delivery method, instructor-led training.
- Experienced consultant, trainers, and professional.
- Qualified trainer with high-level experience

6. Attendance Reports:

- Send daily attendance reports to trainingdep
- Send full attendance report to training dep. by the end of thecourse
- Attend 100 % from the course days also providedaily
- Issue attendance certificate for participant who attend minimum 80% from the course duration

7. Pre/Post Reports:

- Pre- assessment before starting training.
- Post assessment after finish training
- Full report for the deferent between Pre-& Post assessment

8. Who Should Attend?

- Control system engineers
- Instrumentation engineers and technicians
- Engineers, operation, maintenance, inspection and repair specialists
- Mechanical engineers and technicians