# Control Valve Service and Maintenance Course



## *COURSE OBJECTIVES*

This course is designed to provide participants with the working knowledge on various of control valves, control valve sizing and its characteristics. The course covers procedures on how to conduct a regular inspection and maintenance of control valves. It consists of lectures and extensive practical exercises on control valve repair and calibration using the specific tools and testing equipment.

## *WHO SHOULD ATTEND?*

Plant or process supervisors, team leaders, instrument engineers, lectures, and others who need to upgrade the knowledge and a comprehensive review or new experience of control valve technology.

## *TRAINING OUTCOMES?*

At the end of the course, the participants should be able to:

- Explain control valve terminologist.
- Describe the following flow characteristics for valve type selection.
- Describe the control valve parts.
- Size a control valve for liquid, gas and steam service.
- Repair and calibrate different types of control valves.
- Describe the working principle of positioner and I/P converter.
- Define the following terms;
    - Direct/reverse acting actuator.
    - Fail open, fail close, fail lock, fail hold and fail intermediate.

- I/P converter.
- Valve positioner.
- Valve booster.

- Calibrate Smart Control Valve / Smart Positioner.

## COURSE PROGRAM

- Overview of control valve and their parts.
- Types of control valve
- Valve terminologist and specification.
- Control valve characteristics
- Seat leakage classifications.
- Control Valve applications.
- Materials consideration
- Control valve sizing
- Actuators, types, selection and application.
- Control valve accessories.
- Assembling and disassembling of control valve
- Control valve leak test using test rig equipment.
- Operation of Smart Positioner

## About the Course Instructor

**Engr. Azahar bin Mat Noor,** graduated with Bachelor of Engineering (Honors) in Electrical Engineering and major in control system from the University of Technology Malaysia and is both a Registered Professional Engineer (Mechanical) with Board of Engineer, Malaysia and a Member, The Institution of Engineers, Malaysia. He also holds an Instrumentation and Control System certificate from YEW Mitaka, Tokyo.

He had working experiences with several companies such as the Institute Technology Petroleum Petronas (INSTEP) and Centre for Instructor and Advanced Skill Training (CIAST).

Since the past 20 years in teaching, he had delivered for several courses such as;

- Process Design and Process and Instrumentation for process engineer.

- Process control technology for Instrument Engineer.
- Process control technology and application.
- Control valves service and repair.
- Instrumentation and measurement Engineering.
- Basic Instrumentation and Fundamental of Process Control.