Valve and Actuator Technologies - IC-72

This workshop provides a total in-depth insight into valve and actuator technology, covering: control valves, check valves, shut-off valves, solenoid valves, and pressure relief valves. A methodology is presented to ensure the optimum selection of size, choice of body and trim materials, components, and ancillaries. Whilst studying liquid valve sizing, delegates will also learn the correct procedures for calculating the spring 'wind-up' or 'bench set'. Maintenance issues also include: testing for dead-band/hysteresis, stick-slip, and non-linearity; on-line diagnostics; and signature analysis. Throughout the workshop, participants will learn through active participation using exercises, questionnaires, and practical sessions covering: systems choice; basic sizing calculations; computer-based sizing; and maintenance diagnostics.

Designed For

- Facilities, chemical, electrical, instrumentation, maintenance, and mechanical engineers and technicians involved in designing, selecting, sizing, specifying, installing, testing, operating and maintaining shutoff, pressure relief, and control valves.

You will learn

How To:

- Compare the major technologies used in the final control element
- Calculate the valve flow coefficient Cv
- Perform flow and system pressure head loss calculations
- Contrast the different types of control, shut-off, and check valves
- Describe the principles of cavitation control and noise reduction
- Select optimum materials of construction to avoid corrosion and erosion
- Identify the correct requirements for trim selection
- Differentiate between inherent and installed characteristics
- Identify ANSI/DN pipe sizes and pressure ratings
- Explain the control valve seat leakage classifications
- Evaluate the optimum valve-actuator combination
- Apply on-line valve testing and diagnostics for deadband and hysteresis, stick-slip, and non-linearity

- Examine the principles of preventive maintenance through the application of signature analysis
- Perform a bench set and calculate actuator spring wind-up
- Pick the correct positioner using our set of guidelines

Course Content

- Choked flow
- Pressure recovery
- Flashing and cavitation
- Seat leakage
- Sizing for liquids and gases
- Valve construction
- Cavitation control and noise reduction
- Valve types
- Valve trim and characterization
- Valve selection
- Actuators and positioners
- Valve testing and diagnostics
- Maintenance and repair

Course Duration:

5 Days