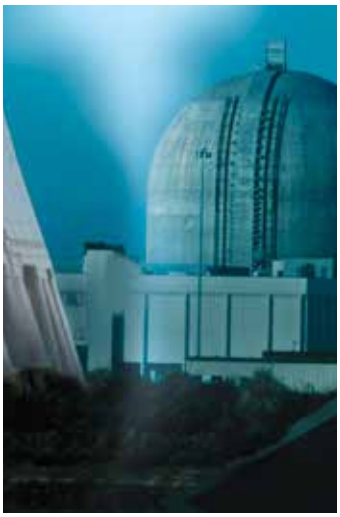
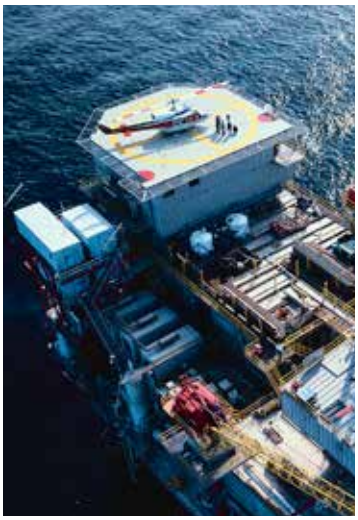
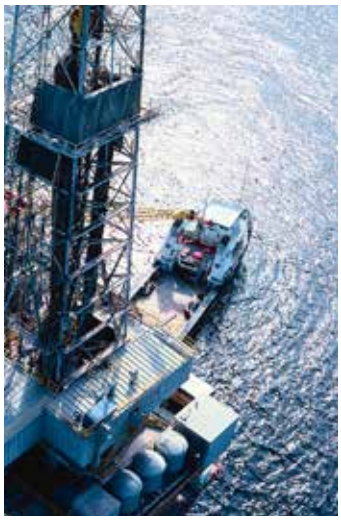
Fisher® Educational Services

Control Valve Courses for Europe







FISHER®

EMERSON™
Process Management

Performance Loop. Cernay Flow Lab

The rapid pace of te and services are ma important than eve

For every step, whether it is Engineering, Commissioning, Operation or Maintenance, adapting to changes and new trends calls for higher Education needs.

Emerson Educational Services developed a control valve Learning Path, built from over 65 years of training experience. Today, we remain committed to providing quality training to thousands of individuals, when and where you need it.

Factory Training
We host factory training courses in which students will attend classes in our fully equipped training laboratory. Our workshops are simply the best investment you can make *today* for the benefit of your employees and your business.

On-site, Local Training
We develop hundreds of customized on-site courses providing an alternative to sending employees off-site. We can tailor training -in your local area -to meet your specific needs.

The theory, reinforced by the hands-on activities, bring participants plenty of opportunities to practice newly learned skills, as well as share field feedback with our experts.

Our objective is to transmit our competencies to participants to enhance their process and to reduce their plant downtime, by acting efficiently on their control valves.

Fisher® Europe Educational Centre
is located in our main valve manufacturing centre of excellence in Cernay (France).

Especially designed for Performance testing and training, the Cernay flow lab. offers live capabilities with:
- *real flow control loop*
- *dedicated education stations*
- *lastest communication technologies*

Upon completion of the course, a certificate will be delivered to all participants.

For registration or more details please call +33 389 37 65 43 or mail to fishereducation.europe@emerson.com

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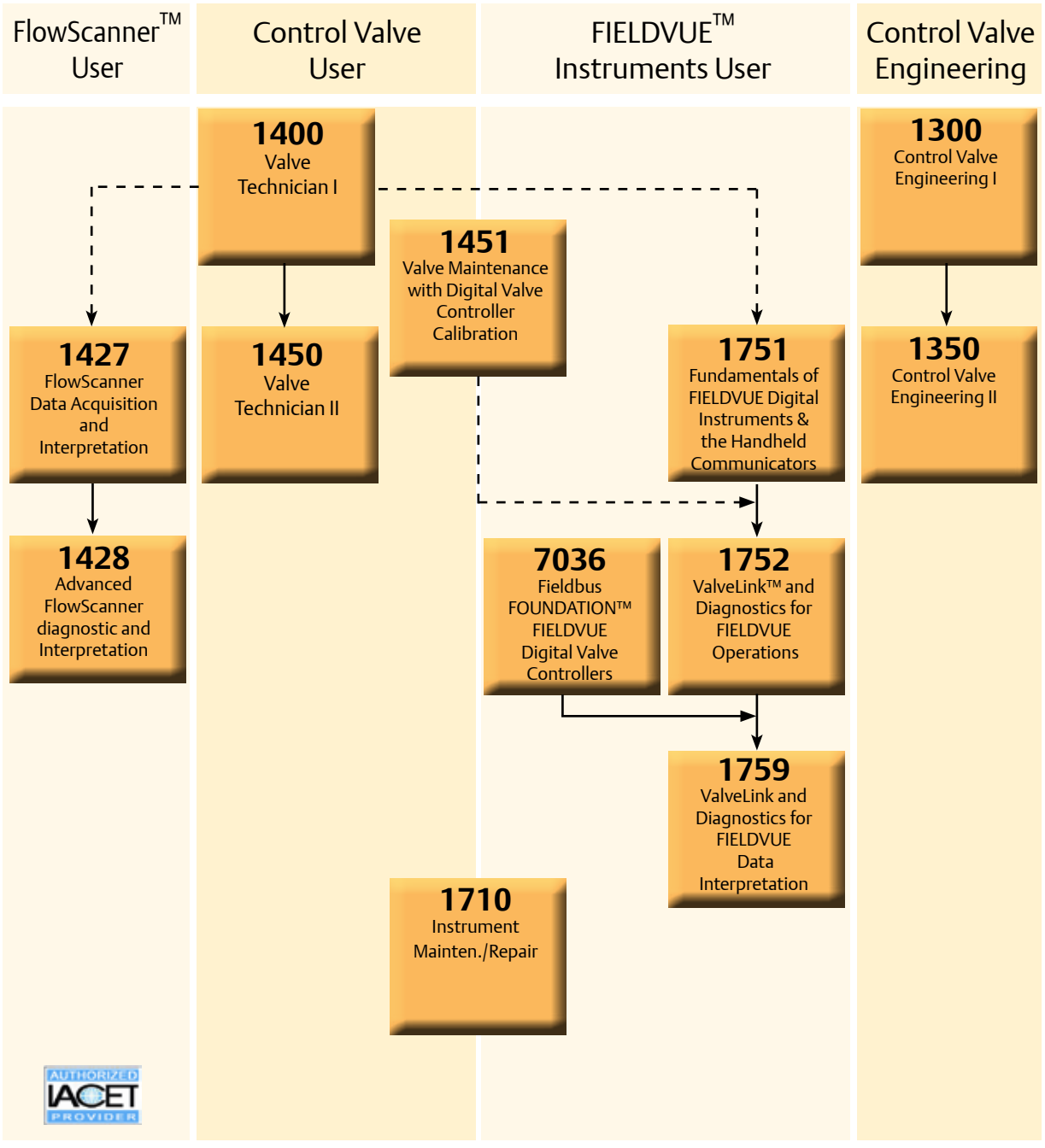
Control Valve TRAINING PATH



Control Valve Use

Course 1400

Valve Technician I

Overview

This 4-day course explains how valves and actuators function and how they are installed and calibrated. It emphasizes installation, troubleshooting, parts replacement, and calibration of control valves, actuators, and positioners. Students spend 50% of their time in hands-on workshops.

Students who take this course will be able to:

- Correctly perform installation procedures
- Perform basic troubleshooting.
- Properly apply and calibrate positioners.
- Change valve trim, gaskets and packing
- Properly perform valve lapping

Prerequisites

Some experience with industrial controls equipment including control valves and actuators would be helpful.

Topics

- Welcome-Introduction
- Production Site Visit
- Control Valve Terminology
- Globe Valves
- Packing
- Actuators and Positioners
- Bench Set
- Seat Leak Testing
- Ball Valves
- Butterfly Valves
- Eccentric Disc Valves
- Special Service Valves
- Valve Characteristics
- Control Valve Noise and Cavitation
- Review – Evaluation - Conclusion

Location

Duration: 4 days
Cernay (France)
Rijswijk (Netherlands)
Szekesfehervar (Hungary)
On Site/Customer Premises

er Courses

Course 1450

Valve Technician II

Overview
This 4-day advanced course is for experienced personnel who will benefit from a broadened perspective of control valve performance and maintenance issues. Students are typical experienced valve mechanics and maintenance personnel, instrument technicians, and others who are responsible for total control valve and control loop performance.

Prerequisites
Valve technician I, course 1400.

Topics
- Welcome-Introduction
- Production Site Visit
- Control Loop Basics
- Major Loop Components and Their Functions
- Piping & Instrumentation Drawings (P & ID's)
- Basic Component Symbology
- Connections and Wiring
- Control Loop Performance
- Loop Performance Objectives
- Influences On Loop Performance
- Valve Selection and Sizing
- Actuator Sizing
- Bench Set and Stem Connection
- Loading Pressure Instrument Selection
- Loading Pressure Instrument Calibration
- Accessory Selection and Configuration
- Controller Tuning
- Severe Service Considerations
- Troubleshooting Basics
- Diagnostics
- Process Variability
- Performance Maintenance Issues
- Tour of Flow Lab Differentiation Loops
- Review – Evaluation - Conclusion

Location
Duration: 4 days
Cernay (France)
Rijswijk (Netherlands)

FIELDVUE™ Instru

Course 1751

Fundamentals of FIELDVUE Digital Instruments & the Handheld Communicators

Overview

This course is for technicians, engineers and others responsible for installing, calibrating and basic troubleshooting FIELDVUE and related instruments using the 375/475 Handheld Communicator.

The primary focus of this course is to provide a comprehensive experience in managing DVC's using the 375/475 Handheld Communicator.

This 3-day lecture/lab style course provides maximum class time with hands-on experience working with FIELDVUE instrumentation and the Model 375/475 Handheld Communicator. The proper configuration and calibration of the Digital Valve Controller will be featured.

Students who take this course will be able to:

- Install and mount a DVC2000 & DVC6000 series positioned onto a Sliding or Rotary Stem Actuator/Valve
- Configure and calibrate FIELDVUE Instruments with the Model 375/475 Communicator

Prerequisites

One to two years of experience and/or course 1400 (Valve Technician I).

Topics

- Welcome-Introduction
- Production Site Visit
- FIELDVUE Theory of Operation
- DVC2000 & DVC6000
- FIELDVUE Instrument Installation.
- Model 375/475 Handheld Communicator
- Instrument Configuration and Calibration
- Instrument Troubleshooting
- Control Loop Wiring Practices & Tri-loop
- ValveLink™ Mobile Overview
- Review – Evaluation - Conclusion

Location

Duration: 3 days
Cernay (France)
On Site/Customer Premises

uments User Courses

Course 1752

ValveLink & Diagnostics for FIELDVUE Operations

Overview

This course is for technicians, engineers and others responsible for installation, calibration and diagnostics for FIELDVUE and related instrument and software. The primary focus of this course is to provide a comprehensive experience in managing Digital Valve Controllers using the AMS ValveLink software.

This 3-day lecture/lab style course provides maximum class time with hands-on experience working with FIELDVUE instrumentation and AMS ValveLink Diagnostic Software.

This is a continuation course for course 1751, Fundamentals of FIELDVUE digital instruments and the handheld communicators.

Students who take this course will be able to:

- Execute ValveLink Diagnostic routines and create an instrument database
- Understand the basics of HART® multiplexer technology

Prerequisites

Fundamentals of FIELDVUE Digital Instruments & the Handheld Communicators, Course 1751.

Topics

- Welcome-Introduction
- Production Site Visit
- Introduction to ValveLink
- AMS ValveLink Tag and Database Issues
- Configuration with ValveLink
- Calibration with ValveLink
- AMS ValveLink Diagnostics
- HART Multiplexer
- AMS ValveLink Security and Account Management
- FIELDVUE & AMS ValveLink Troubleshooting
- Review – Evaluation - Conclusion

Location

Duration: 3 days
Cernay (France)
On Site/Customer Premises

FIELDVUE™ Instru

Course 1759

ValveLink & Diagnostics for FIELDVUE Data Interpretation

Overview

This course is designed to teach the techniques necessary to collect and interpret valve diagnostic tests performed using AMS ValveLink™ software.

This 3-day course uses classroom lectures and hands on workshops to teach the student to interpret and analyze diagnostic data obtained using FIELDVUE Digital Valve Controllers and AMS ValveLink software. Students will perform diagnostic tests on a variety of valve/actuator combinations and use the data to determine bench set, dynamic error band, seat load, spring rate and other pertinent parameters. Students will also perform comparison tests on valves/actuators containing assembly or operating flaws and use the data for troubleshooting purposes.

Students who take this course will be able to:

- Use/understand diagnostic terminology
- Interpret AMS ValveLink diagnostic traces and determine bench set, packing friction, seat load, spring rate, dynamic error band and a number of other common valve parameters
- Use diagnostic traces to troubleshoot problems in valve/actuator assemblies.

Prerequisites

Students must have completed courses:

- Fundamentals of FIELDVUE Digital Instruments & the Handheld Communicators (Course #1751) or its equivalent
- ValveLink & Diagnostics for FIELDVUE -Operations (Course #1752) or its equivalent

Topics

- Welcome-Introduction
- Production Site Visit
- Pneumatic Control Valve Terminology
- Features of the Digital Valve Controller and AMS ValveLink Software
- AMS ValveLink Diagnostic Tests
- Data Interpretation
- Troubleshooting Techniques
- Comparison Testing Techniques
- Performance Diagnostics
- Review – Evaluation - Conclusion

Location

Duration: 3 days
Cernay (France)
On Site/Customer Premises

uments User Courses

Course 7036

Fieldbus Digital Valve Controllers

Overview

This 3-day course is designed to teach technicians and engineers the basics of FOUNDATION™ fieldbus DVC installation, configuration, calibration, and troubleshooting using 375/475 Handheld, National Instruments tools and the AMS ValveLink software.

The course begins with a review of the role and function of control valve positioners and proceeds through a series of hands-on exercises that require the student to disassemble, inspect, assemble, install, and commission a fieldbus DVC. Students will learn the basics of the fieldbus protocol, the role of function blocks, addressing, modes and status. Students will configure, calibrate, and commission devices using both NI tools andValveLink software.

Hands-on exercises also teach students how to perform detailed setup routines and how to run and interpret various ValveLink diagnostics.
The class ends with a troubleshooting session that presents common problems and their solutions

Prerequisites

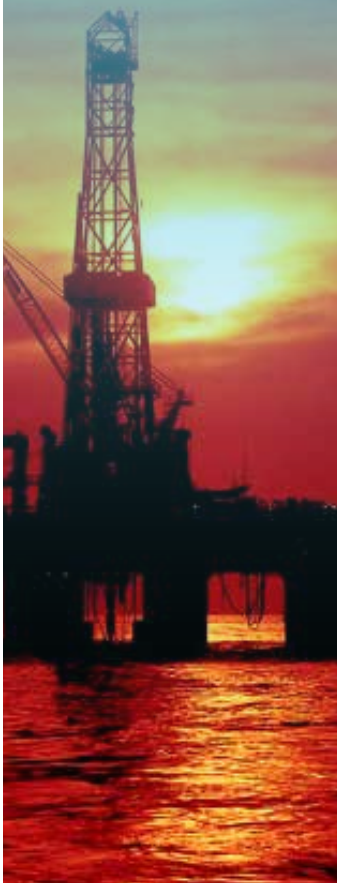
Basic familiarity with positioners– preferably DVC's – and control valve basics will be most useful.

Topics

- Welcome-Introduction
- Production Site Visit
- Positioner Basics
- Fieldbus Overview
- DVC Installation and Mounting
- Modes and Status
- Configuration and Calibration with NI Tools
- Configuration and Calibration with new 375/475 Handheld
- Introduction to ValveLink fieldbus Functionality
- ValveLink Setup Wizard / Detailed Setup
- Tuning
- Tag Management
- Pressure Control
- AMS ValveLink Diagnostics
- FIELDVUE Instrument Troubleshooting
- Review – Evaluation - Conclusion

Location

Duration: 3 days
Cernay (France)
Rijswijk (Netherlands)
On Site/Customer Premises



FlowScanner™ Us

Course 1427

FlowScanner Data Acquisition & Interpretation

Overview

This course is for personnel who will perform and interpret control valve diagnostic testing using a flowScanner.
This 4-day course uses lecture and hands-on labs to teach students to properly acquire and analyze diagnostic data using the FlowScanner. This course teaches proper setup of hardware and software, accurate entry of data, and other procedures that are required to ensure accuracy when acquiring data. Actual case histories form a basis for teaching interpretation skills. Students will test and diagnose a sampling of valves in which specific problems have been introduced.

Students who take this course will be able to:

- Navigate features of FlowScanner software
- Correctly mount sensors and related FlowScanner hardware on standard air-operated valves (AOV's)
- Enter valve, instrument and actuator data
- Correctly enter test parameters
- Perform various step and strocking tests to collect diagnostic data.
- Analyze typical /atypical, FlowScanner data
- Create/view standard FlowScanner reports

Prerequisites

Course 1400 or Course 1710, or significant experience in valve and instrument operation/maintenance procedures.

Topics

- Welcome-Introduction
- Production Site Visit
- FlowScanner Hardware/Software Overview
- In-Depth Software Navigation
- Setup and Testing Techniques
- Data Entry & Test Criteria Best Practices
- Data Management
- Report Generation/Expected Results
- Background Software Routines and Equations for the Analysis Numbers
- Case Study Analysis-Including Discussions of Valve/Instrument/ Installation Problems
- Laboratory activities/Support
- Review – Evaluation - Conclusion

Location

Duration: 4 days
Cernay (France)
On Site/Customer Premises

er Courses

Course 1428

Advanced FlowScanner Diagnostic Interpretation

Overview

This 3-day course is for personnel who are responsible for interpreting plots and other diagnostic data that is acquired with the Fisher FlowScanner. This course focuses on data interpretation. Data acquisition is taught in course 1427.

Because of the advanced nature of this class, the pre-requisite is strictly enforced. A pre-test and a control valve awareness test are used to confirm applicant readiness. A brief review of FlowScanner software confirms students familiarity with tests setup, pressure and travel channels, and the objectives of all available test procedures. The course is based on a structured combination of lecturers and hand-on labs to teach students how to identify problems in control valve assemblies. Emphasis is placed on determining and confirming overall control valve health and condition by examining each of the major components of the assembly: I/P, positioned, Actuator, and Valve Body. Reports generation and some field tips are also presented. To capitalize on learning from shared experiences, students are encouraged to bring in test data from an interesting scenario or current problem.

Those who complete this course will:

- Select the appropriate FlowScanner test for a given scenario
- Use FlowScanner functions to generate Quick Reports
- Understand the impact of scan rates on the appearance and interpretation of acquired data
- Analyze FlowScanner test data to determine overall control valve health by evaluating condition of the various components of the assembly
- Identify multiple anomalies in a single assembly
- Learn how to perform a step test on a discrete valve without interrupting power to the valve

Prerequisites

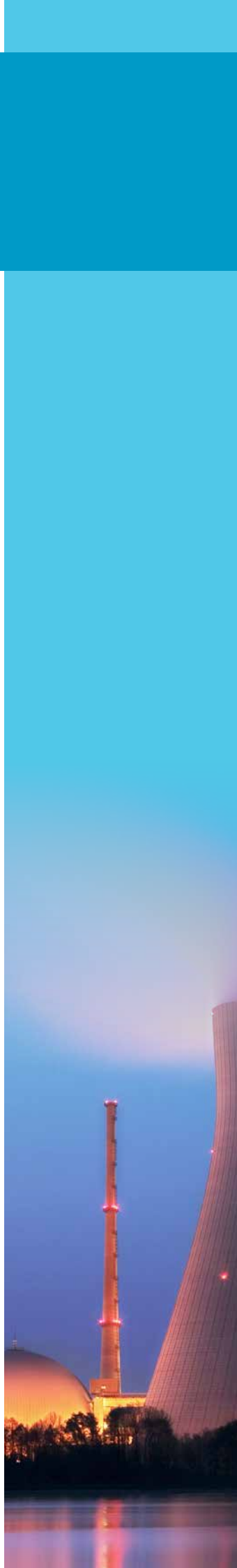
Course 1427 and a minimum of 6 months of diagnostic testing with the FlowScanner.

Topics

- Welcome-Introduction
- Production Site Visit
- Review of various FlowScanner test and Specific objectives of Each
- Impact of Test Configuration Errors
- Data Interpretation from Test of “bugged “Valve Assembles
- Multiple Anomalies found in Control Valves
- Exporting data
- Generating quick Reports
- Interpretation of Difficult Uncovered Control Valve Problems
- Review – Evaluation - Conclusion

Location

Duration: 3 days
Cernay (France)
On Site/Customer Premises



Control Valve & F

Course 1451

Valve Maintenance with Digital Valve Controller Calibration

Overview

This is a 4-day session. The first 2 days of the course will cover sliding stem and rotary valves and actuators. Topics will include valve and actuator setup, maintenance, repair and troubleshooting.

The following 2 days will be focused on the installation, calibration of the 6000 series digital valve controller (Digital Valve Controllers) using the 375/475 Field communicator. An overview of AMS ValveLink™ Software will be included. Students spend 50% of their time in hands-on workshops.

Students who take this course will be able to:

- Correctly perform installation procedures
- Perform basic troubleshooting
- Change valve trim, gaskets and packing
- Install and mount a digital valve controller onto a sliding or rotary stem actuator/valve
- Configure and calibrate FIELDVUE™ Instruments with the HART Model 375/475 Communicator

Prerequisites

Experience in instrument calibration and in control valve maintenance, installation, and operation would be helpful.

Topics

- Welcome-Introduction
- Production Site Visit
- Control Valve Terminology
- Globe Valves/Packing
- Actuators
- Bench Set
- Ball Valves; Butterfly Valves; Eccentric Disc Valves
- Valve Characteristics
- Control Valve Noise and Cavitation
- Digital Valve Controller Theory of Operation
- HART Communication Signal
- FIELDVUE Instrument Installation
- HART Model 375/475 Field Communicator
- Instrument Configuration and Calibration
- Instrument Troubleshooting
- Control Loop Wiring Practices
- Review – Evaluation - Conclusion

Location

Duration: 4 days
Cernay (France)
Rijswijk (Netherlands)
On Site/Customer Premises

IELDVUE™ Instrument User Courses

Course 1710

Instrumentation Maintenance and Repair

Overview

This course is designed for Technicians and service people responsible for installing, calibrating, repairing and troubleshooting pneumatic and electronic instruments.

This 4-day course explains instrument maintenance, troubleshooting, calibration and controller tuning. Student spend approximately 75% of their time in hands-on workshops in small groups. They completely disassemble, reassemble, and calibrate many of the instruments they would encounter on the job.

Students who take this course will be able to:

- Rebuild pneumatic and electro-pneumatic instruments
- Calibrate instruments
- Troubleshoot and repair instruments
- Properly use special tools and test instrument
- Perform basic Controller tuning

Prerequisites

Valve Technician I (Course 1400) or have significant experience in valve/ instrument operation and maintenance procedures.

Topics

- Welcome-Introduction
- Production Site Visit
- Actuators
- Controller Tuning
- I/P Positioner
- I/P Transducer
- Pneumatic Positioner
- Pneumatic Controllers
- Positioner and Digital Valve Controller Application
- Pneumatic Level Controllers
- Pneumatic and Digital Level transmitters
- FIELDVUE Digital Valve Controllers (Overview)
- Review – Evaluation - Conclusion

Location

Duration: 4 days
Cernay (France)
On Site/Customer Premises

Control Valve Eng

Course 1300

Control Valve Engineering I

Overview

This course is for engineers and other persons responsible for the selection, sizing, and application of control valves, actuators and positioners.

This 4-day course explains how to select the correct control valve, actuator and accessories to operate through the full range of process conditions. This course covers general applications and emphasizes the sizing and selection methods for a broad variety of control valves and actuators.

Students will solve various sizing and selection problems using published materials and Fisher Specification Manager software, plus participate in equipment demonstrations and workshops.

Students who take this course will be able to:

- Select the proper valve characteristic for a given process
- Choose suitable styles of control valves for an application
- Select size of control valves and actuators
- Select the best actuator for all applications
- Properly apply positioners

Topics

- Welcome-Introduction
- Production Site Visit
- Actuator Selection and Sizing
- Cavitation
- Control Valve Selection: Rotary and Sliding Stem
- Corrosion Resistant Valves
- Liquid Valve Sizing
- Positioners and Transducers
- Valve Application Guidelines
- Valve Characteristics
- Valve Packing Considerations
- Valve Noise (IEC Prediction Method)
- Gas Valve Sizing
- Review – Evaluation - Conclusion

Prerequisites

Some experience with industrial controls equipment including control valves and actuators would be helpful.

Location

Duration: 4 days
Cernay (France)
Rijswijk (Netherlands)
Szekesfehervar (Hungary)
On Site/Customer Premises

gineering Courses

Course 1350

Control Valve Engineering II

Overview

This course is for practicing engineers and senior technicians who are seeking advanced training in control valve selection and sizing, and application problem solving.

This 4-day course proceeds from a review of basic sizing and selection concepts to advanced concepts used when selecting and sizing control valves for severe service and unusual applications.

The course includes lectures and numerous problem-solving sessions that make extensive use of Firstvue software and other sizing and selection tools.

Students who take this course will be able to:

- Select and size control valves and diffusers to reduce aerodynamic noise
- Select and size control valves for cavitating applications
- Select and size steam conditioning valves
- Select valve types and options for corrosive and erosive fluids
- Select and size control valves for two-phase flow and hydrocarbon mixtures

Topics

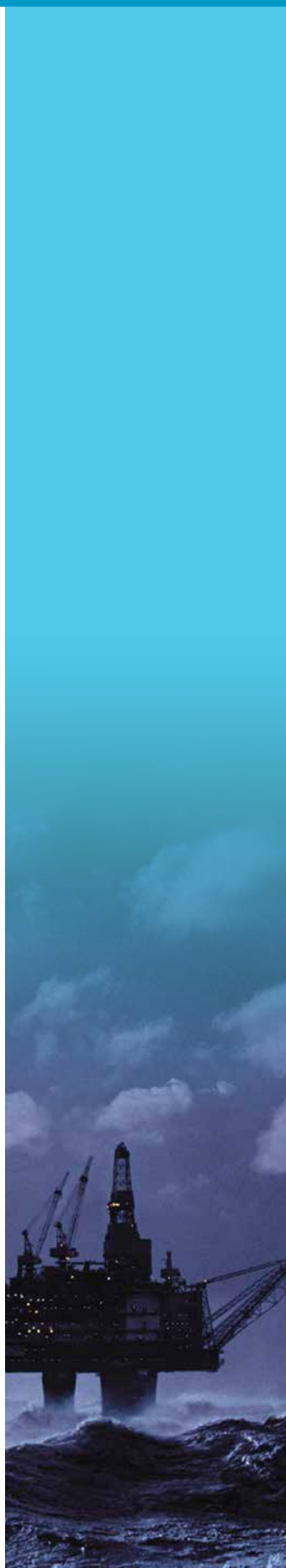
- Welcome-Introduction
- Production Site Visit
- Aerodynamic Noise
- Whisper Trim
- IEC Noise Prediction
- Whisper Flow Diffusers
- Cavitation Issues and Solutions
- Steam Conditioning Valves
- High Pressure/Temperature Issues
- Sizing for Two Phase Flow, Fluid Mixtures, and dissolved Gas
- Corrosive/Erosive Service
- Actuators: Stroking Speed, Hysteresis, and Other Control Application Guidelines
- Review – Evaluation - Conclusion

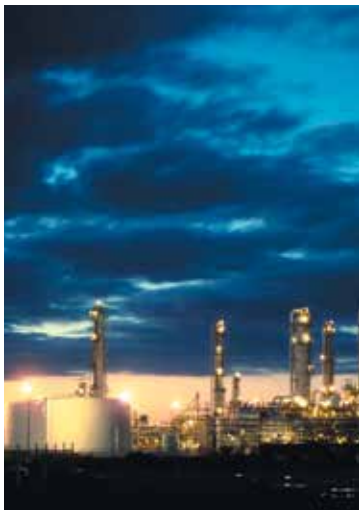
Prerequisites

Students should have completed the Control Valve Engineering course (Course 1300) or have equivalent experience (minimum of two years specifying control valves and instrumentation). Familiarity with Fisher Specification Manager is highly recommended.

Location

Duration: 4 days
Cernay (France)
Rijswijk (Netherlands)
On Site/Customer Premises



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Process Management

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