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Valve Technology for Oil and Gas Facilities Training Course

15 – 19 February 2027
Singapore

Valve Technology for Oil and Gas Facilities Training Course

Ref: 2953_111969 **Date:** 15 – 19 February 2027 **Location:** Singapore **Fees:** 9300 GBP

Valve Technology for Oil and Gas Facilities is a 1-week training course for mechanical, maintenance and instrument engineers who choose, operate and repair the valves on wellsites, process trains and storage terminals, and who leave with a valve selection and maintenance sheet for one plant system. Leaking seats and wrong body choices still cause unplanned shutdowns and emissions. Jupiter Prime Training delivers this valve technology course.

Why Valve Technology for Oil and Gas Facilities Matters Now

Three pressures now shape how oil and gas facilities treat their valves. Emission reduction targets turn stem packing and body joint leaks into reportable losses. Ageing assets carry valves that have outlived their original service, now handling sour gas, sand or higher pressures than intended. Leaner maintenance crews must decide quickly whether a valve is repaired in line, overhauled or replaced. A site that matches every valve to its duty and keeps a clear repair history avoids trips, spills and long isolations.

Who Gains Most from Valve Technology for Oil and Gas Facilities

- Engineers specifying valve bodies, trims and seals for new or modified piping
- Maintenance staff who overhaul, lap, repack and pressure test valves off line
- Instrument engineers who look after positioners and limit switches
- Operations engineers who judge whether an isolation is holding
- Reliability specialists who set repair intervals

A maintenance department sending mechanical and instrument staff together gains most.

Valve Technology for Oil and Gas Facilities Capabilities

Participants move from choosing valves by habit to choosing them by fluid, pressure class and shutoff need.

- Specify body type, trim and seat material for a stated process duty — piping design approval
- Weigh soft-seated and metal-seated options for sand, sour and high-temperature service — materials engineers
- Calculate a basic flow coefficient for throttling duty and check the opening range — process engineers
- Test seat and stem leakage against the acceptance level set for each valve — maintenance supervisors
- Diagnose sticking, passing and noisy valves from field symptoms — operations shift teams
- Build a repair, overhaul or replace decision for each critical valve — reliability planners

Key Valve Technology for Oil and Gas Facilities Terms

- Trim — the internal wetted parts of a valve, such as the plug, ball, disc, seat and stem.
- Pressure class — the rating that sets the pressure a valve body can hold at a given temperature.
- Passing valve — a closed valve that still lets fluid leak across its seat to the downstream side.
- Flow coefficient — a number describing how much liquid an open valve passes at a set pressure drop.
- Fugitive emission — gas escaping through stem packing, gaskets or body joints.
- Cavitation — vapour bubbles collapsing inside a valve, eroding trim and causing noise.

Valve Technology for Oil and Gas Facilities Day by Day

Day 1: Valve Families and Their Duties

- Gate, Globe and Check Valves — Matching Body Shape to Isolation or Throttling
- Ball, Plug and Butterfly Valves — Quarter-Turn Choices for Space and Speed
- Pressure Class and End Connections — Fitting the Valve to the Piping
- Through-Conduit and Piggable Designs — When Full Bore Is Needed
- Valve Data Sheets — Recording Duty, Rating and Shutoff Need

Day 2: Materials, Seats and Sealing

- Body and Trim Materials — Resisting Sour Gas, Chlorides and Sand
- Soft Seats Versus Metal Seats — Tightness, Temperature and Erosion Limits
- Stem Packing and Low-Emission Seals — Cutting Leaks to Atmosphere
- Fire-Tested and Cryogenic Designs — Keeping Shutoff Under Extreme Conditions
- Gaskets and Bolting at Body Joints — Holding Pressure Over Thermal Cycles

Day 3: Throttling, Actuation and Operation

- Flow Coefficient Estimates — Checking Opening Range for Throttling Duty
- Cavitation and Flashing Signs — Choosing Trim That Survives Pressure Drop
- Manual Gearboxes and On-Off Actuation — Matching Operating Effort to Access
- Positioners and Limit Switches — Confirming Valve Position to the Control Room
- Safe Operating Practice — Opening Sequences, Equalising and Avoiding Water Hammer

Day 4: Inspection, Testing and Troubleshooting

- Shell and Seat Pressure Tests — Proving Integrity After Repair
- Leakage Acceptance Levels — Deciding Whether a Passing Valve Must Come Out
- Acoustic and Thermal Checks — Finding Passing Valves Without Isolation
- Sticking, Seizure and Stem Damage — Tracing Root Symptoms in the Field
- In-Line Repair, Sealant Injection and Lapping — Choosing the Least Disruptive Fix

Day 5: Practising the Valve Selection and Maintenance Sheet

- Sour Gas Separator Outlet — Applying Material and Seat Choices
- Produced Water Choke Station — Applying Throttling and Cavitation Checks
- Refinery Product Tank Isolation — Applying Leakage Testing and Repair Options
- Peer Challenge of Valve Choices — Defending Duty, Cost and Spares
- Valve Selection and Maintenance Sheet — Issuing Types, Tests and Repair Intervals

Applying Valve Technology for Oil and Gas Facilities After the Course

- Survey the ten most repaired valves in one unit and record body type, trim and failure symptom against duty.
- Run acoustic checks on closed isolation valves around one vessel and rank passing valves for overhaul.

Valve Technology for Oil and Gas Facilities Questions FAQ

What is valve technology for oil and gas facilities, and why does it matter now?

It is the choice, operation and repair of the valves that isolate, throttle and protect plant equipment. Emission targets and ageing assets make correct choices central to steady production.

Which roles gain most from valve technology for oil and gas facilities?

Mechanical and maintenance engineers gain most, with instrument engineers who look after valve position. Operations and reliability staff also benefit.

How does valve technology for oil and gas facilities differ from a control valve sizing course?

It covers every valve family across a facility, from isolation to check valves, with materials, testing and repair. A control valve sizing course goes deep into throttling calculations for one valve type.

What do you bring back from valve technology for oil and gas facilities?

You bring back a valve selection and maintenance sheet for one plant system. It lists each valve's type, materials, test levels and repair interval.

Valve Technology for Oil and Gas Facilities: The Way Forward

The valve selection and maintenance sheet first informs which valves on one system should be overhauled, upgraded in material or replaced at the next shutdown. Maintenance planners and instrument engineers use it to agree spares and test intervals. After its first use, revisit the leakage acceptance levels against the repair history the sheet has gathered.