JUPITER PRIME

Consulting • Training • Advisory

جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Pipeline Supervisory Control and Data Acquisition Training Course

22 – 26 August 2027
Muscat

Pipeline Supervisory Control and Data Acquisition Training Course

Ref: 2890_110404 **Date:** 22 – 26 August 2027 **Location:** Muscat **Fees:** 6500 GBP

Pipeline Supervisory Control and Data Acquisition is a 1-week training course for pipeline controllers and control system engineers who operate crude, product and gas lines remotely; it ends with each participant drafting a control room management plan. Remote valves, pumps and compressors are now operated from one console across hundreds of kilometres, so a missed alarm or a tired controller can escalate within minutes. Jupiter Prime Training delivers this course for control room teams.

Why Pipeline Supervisory Control and Data Acquisition Matters Now

Three forces shape pipeline control rooms today. Automation lets fewer controllers watch more stations and block valves. Field networks now connect to business systems, exposing consoles to intrusion and spoofed telemetry. Operators also expect evidence that controllers are fit, trained and backed by clear procedures. Handled well, leaks are detected sooner and lines restart safely; handled badly, the result is alarm floods, confused handovers and delayed shutdowns. The course rests on alarm lifecycle principles, human factors engineering and layered network defence.

Who Gains Most from Pipeline Supervisory Control and Data Acquisition

- Console operators who watch pressure, flow and batches and act on alarms
- Control system engineers who configure hosts, field devices and links
- Shift supervisors who allocate console workload and sign off handovers
- Leak detection analysts who tune models and confirm leak indications
- Operational technology security staff who protect field networks and consoles

A control centre gains most when a controller, an engineer and a supervisor attend together.

Pipeline Supervisory Control and Data Acquisition Capabilities

Outcomes centre on polling, alarms, displays and rosters.

- Assess host, communication and field device architecture for single points of failure — redundancy investment decisions
- Design an alarm philosophy with priorities, set points and shelving rules — console operators and engineers
- Specify display layouts and point naming that support rapid situational awareness — human factors reviews
- Build shift rosters and handover routines that limit controller fatigue — shift supervisors
- Apply abnormal operating procedures for leaks, overpressure and communication loss — emergency response teams
- Test network segmentation and remote access controls for the console — operational technology security staff

Key Pipeline Supervisory Control and Data Acquisition Terms

- Remote terminal unit — a field device that reads instruments, executes commands and reports station data to the host.
- Polling cycle — the interval in which the host requests fresh values from every field device on the network.
- Alarm flood — more alarms than a controller can read, hiding the ones that matter.
- Computational pipeline monitoring — software comparing measured and modelled line behaviour to flag leaks.
- Point-to-point verification — a check that each field signal matches its console tag.
- Controller fatigue — reduced alertness from long shifts or night work.

Pipeline Supervisory Control and Data Acquisition Day by Day

Day 1: Remote Operation Architecture and Telemetry

- Host Server and Field Device Hierarchy — Where Redundancy Investment Matters Most
- Remote Terminal Units and Programmable Controllers — Station Control Allocation
- Radio, Fibre and Satellite Links — Communication Path Selection and Backup
- Polling Cycles and Report-by-Exception — Data Freshness for Line Control
- Point-to-Point Verification Records — Confidence in Console Tags After Changes

Day 2: Alarm Philosophy and Console Displays

- Alarm Philosophy Document — Priority Rules Agreed Across Operations and Engineering
- Set Point Rationalisation and Deadbands — Reducing Nuisance and Chattering Alarms
- Alarm Shelving and Suppression Logs — Controlled Removal of Standing Alarms
- High Performance Display Layouts — Faster Recognition of Abnormal Line Conditions
- Alarm Rate Metrics and Flood Reviews — Monthly Console Workload Decisions

Day 3: Controller Fitness, Handover and Procedures

- Fatigue Risk Rosters and Rest Breaks — Shift Pattern Choices for Night Work
- Structured Shift Handover Checklist — Continuity of Batches, Permits and Alarms
- Abnormal Operating Procedures — Overpressure, Communication Loss and Pump Trips
- Leak Indication Response Flowchart — Shutdown or Investigate Within Defined Minutes
- Controller Qualification and Simulator Drills — Readiness for Rare Line Events

Day 4: Change Control and Network Defence

- Management of Change for Console Configuration — Approving Tag and Logic Edits
- Network Zones and Conduits — Separating Field Networks from Business Systems
- Remote Access and Vendor Connections — Who May Reach the Console and When
- Historian Data and Event Logs — Evidence for Incident Reconstruction
- Operational Technology Incident Playbook — Isolating a Compromised Station

Day 5: Practising the Control Room Management Plan

- Console Architecture Review Exercise — Applying Redundancy Findings to One Line
- Alarm Flood Simulation — Testing Priorities and Shelving Rules Under Pressure
- Handover and Fatigue Scenario — Applying Roster and Checklist Choices
- Cyber Intrusion Tabletop — Rehearsing Station Isolation and Manual Operation
- Control Room Management Plan — Roles, Alarms, Fatigue, Procedures and Defence

Applying Pipeline Supervisory Control and Data Acquisition After the Course

- Lead an alarm rationalisation review of the most frequent console alarms and agree new set points with engineering.
- Run a structured shift handover trial on one console, recording missed items to refine the roster.

Pipeline Supervisory Control and Data Acquisition Questions FAQ

What is pipeline supervisory control and data acquisition and why does it matter now?

It is the system of hosts, field devices and links that lets controllers operate pipelines remotely. It matters now because consoles cover longer networks with fewer people and face new intrusion risks.

Which roles gain most from pipeline supervisory control and data acquisition training?

Console operators, control system engineers and shift supervisors gain most. Leak detection analysts and security staff also benefit, since they rely on the same alarms and telemetry.

How does this pipeline supervisory control and data acquisition course differ from a telemetry maintenance course?

It focuses on operating the line from the console rather than repairing field equipment. A maintenance course centres on fault tracing and servicing outstations, radios and servers.

What do you bring back from pipeline supervisory control and data acquisition training?

You bring back a draft plan for your own control room covering console roles, alarm priorities, fatigue and handover arrangements, abnormal procedures and network defence.

Pipeline Supervisory Control and Data Acquisition: The Way Forward

The control room management plan first informs how alarm priorities and shift rosters are set on each console. Controllers, supervisors and control system engineers use it to agree who acts, when and with what information. After first use, revisit fatigue and alarm rate evidence whenever new stations or automation are added.