Practical Process Control Techniques Training

This popular 3 day course is a must for people who want to polish up their regulatory control skills and get some hands on experience with loop tuning. The agenda also covers design of Advanced Regulatory Control with an introduction to higher level technologies. Attendees from a range of disciplines (process engineers, instrument/electrical engineers, instrument/DCS technicians, industry consultants and process control engineers) have benefited from the blend of practical techniques explained through the use of real life examples and simulation exercises.

**DAY ONE**
Process Control context – objectives, benefits, threats, terminology and structure.
Process Responses – types and measurement.
Data analysis – sampling, noise and filtering.
PID feedback control – PID components, equation types and tuning approaches.
Tuning techniques – flow, pressure, temperature and level tuning approaches.
Loop performance and instrument vulnerabilities.

Exercises to focus on:
Response definition and appropriate use of filtering
Use of the free Tune Wizard tuning tool

**DAY TWO**
Dealing with Deadtime – tuning and model based control.
Cascade control – initialisation and anti-windup issues.
Process non-linearity and how to deal with this.
Constraint control and ratio control.
Dynamic compensation and feedforward control.

Exercises to focus on:
Diagnosing loop performance problems
Issues associated with tuning level loops manually
Design of cascaded loops and solutions to non-linearity
PID loop design and Feedforward control design review

**DAY THREE**
Alternative level control approaches, Distillation control approaches, Interaction and Decoupling.
Duty control, Use of calculations and pressure compensated temperatures, Use of engineering models and developing an inference, Analyser feedback control, Control scheme design, implementation and maintenance and Operator Needs.

Exercises to focus on:
Issues associated with tuning deadtime loops manually
Design of duty controllers
Level and Pressure Controller tuning techniques

This course can be customised to your requirements if required.

Maximum number of attendees: 20

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Safety Solutions Ltd are New Zealand’s leading Process Safety consultants and trainers.

As part of our consultancy portfolio, Safety Solutions Ltd can offers support across the whole life cycle of a process plant, from hazard identification and risk assessment to alarm management, process safety audits and incident investigation.

Our training courses are also offered as in-house courses with industry specific examples and workshops. For more information about any of our courses please contact Safety Solutions:

E: training@safetysolutions.co.nz
W: www.safetysolutions.co.nz

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**Other courses by Safety Solutions**
- Introduction to Process Safety (1 day)
- Hazardous Area Classification (2 days)
- HAZOP Participants (1 day)
- HAZOP Leader (2 days)
- Advanced HAZOP (1 day)
- SIL Facilitators (2 days)
- Risk Assessment (2 days)

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**Delivered by Safety Solutions for** IChemE
- Fundamentals of Process Safety (5 days)
- Layer of Protection Analysis (2 days)