GREENFERN DYNAMICS

SUSTAIN OPTIMUM

Practical Process Control Techniques

3 Day Course Training Course Agenda

Register here for our next PPCT course.

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
- Workshop to discuss specific control issues (attendee supplied)

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.
- Multivariable Predictive Control and benefits estimation.
- Other APC Techniques: Neural networks, Fuzzy logic and Expert Systems.

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

Attendees are equipped with the ability to make immediate production improvement.

Valuable training hours to meet professional CPD requirements whatever your discipline.

Note – although the course tuning exercises use TuneWizard from PAS (available for free from https://www.pas.com/products-services/operations-management/tunewizard), the purpose of the exercises is to demonstrate generic loop tuning principles and skills applicable to any tuning package.