Common Core

Unit - WPTCC12 - Process Control Systems

This training specification is knowledge only has been developed from the water process technician standard. The specification details the **minimum** training specification, as agreed by industry employers, to deliver the skills and knowledge required to use process control equipment and Supervisory, Control and Data Acquisition (SCADA) systems in the water industry.

The specification details the critical requirement of the activity to carry out the work outlined and does not preclude employers from adding to the skills and knowledge detailed by the specification in their own training programmes.

All work must be carried out to approved procedures and practices and in accordance with statutory health, safety and environmental requirements.

What does this specification look like?

Learners need to be able to:

UPCS1 Use the various types of process control equipment commonly found in the water sector

UPCS2 Use SCADA systems to monitor and control equipment commonly found in the water sector

UPCS3 Analyse and interpret data produced by the systems

What do I need to take this module?

There are no specific module pre-requisites necessary for candidates before taking this module.

Knowledge and Understanding

To achieve this unit, you will need to know and understand:

General Requirements

K1. The principles of Health, Safety and Environmental legislation when working with treatment processes
K2. The organisation's safety rules, policies and procedures when working with treatment processes
K3. The hazards associated with working with treatment processes and the correct way to respond to them
K4. How to select, inspect and use PPE when working with treatment processes
K5. How to carry out a site specific risk assessment and identify workplace hazards
K6. How to respond in the event of an emergency situation in the workplace environment
K7. How to leave the work area in a safe and secure condition
K8. The company recording and reporting process

Task Specific – Using Process Control and SCADA Systems

K9. The different types of equipment used for process control operations and the functions they perform, which depending on the pathway, may include:
    a) Instrumentation-Dissolved Oxygen Probes
    b) Ammonia monitors
    c) Flow meters
    d) Level meters
    e) Temperature meters
    f) Analytical Instrument Controllers such as pH, turbidity, chlorine, etc.
    g) Proportional Integral and Derivative P.I.D. Controllers
K10. How to adjust set-points and alarm values for different types of equipment used for process control operations, to include:
    a) Instrumentation-flow meters
    b) Level meters
    c) Temperature meters
    d) Analytical Instrument Controllers such as pH, turbidity, chlorine, etc.
    e) Proportional Integral and Derivative P.I.D. Controllers
K11. What SCADA systems are and what functions they may be asked to perform when used in the water industry
K12. How to use a SCADA system, to include the following:
    a) Logging into the system and the importance of password security
    b) Navigation around the system
    c) Interpretation of mimic pages

d) Adjusting control set-points
e) Interpretation of alarm lists
f) Accepting alarms
g) Overriding / ignoring alarms
h) Adjusting alarm levels
i) Viewing and understand trend data
j) Setting up ad-hoc trends
k) Basic maintenance of a SCADA system, i.e. shutting down and restarting nodes

How will it be assessed?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Assessment types:

1. External assessment – an external accrediting body will assess against a national minimum standard
2. Internal assessment process – a company led on-going assessment against requirements
3. End-point assessment – see assessment plan for further details here (will be Energy & Utility Skills defined)

What type of evidence will be expected?

To achieve this unit, you will need to be able to provide evidence of the performance criteria and the knowledge and understanding requirements listed above.

Evidence types:

1. On-going local assessments
    a) Assessment plan, review, feedback, standard assessment sheets
2. Knowledge based learning
    a) Classroom, exams, assignments, Q&A sessions, e-learning modules
3. Evidence portfolios
    a) Learning logs, photos, observation sheets

Assessment types and process