

# COGWT18 – SQA Unit Code (H411 04)

## Evaluate water treatment for evaporative cooling systems



### Overview

This unit is for those involved in:

- 1 producing and evaluating water treatment programme for evaporative cooling systems
- 2 producing control measures
- 3 performance monitoring
- 4 identifying and progressing corrective actions
- 5 investigating the cause of faults and errors

### Previous Version

None

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### Performance criteria

- You must be able to:*
- P1 work safely at all times, complying with health and safety procedures in line with company policies
  - P2 produce a water treatment programme to meet system requirements and regulatory requirements utilising design models
  - P3 produce a programme of control measures to maintain the efficacy of the treatment programme in accordance with company operating procedures
  - P4 identify and assess system conditions relevant to the water treatment programme
  - P5 assess the performance of the treatment programme for evaporative cooling systems in accordance with company operating procedures
  - P6 investigate faults and errors in the system in accordance with company operating procedures
  - P7 identify and progress a programme of corrective actions for evaporative cooling systems in accordance with company operating procedures
  - P8 record information and write report using company documentation in accordance with company operating procedures
  - P9 provide the documentation to the relevant people

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### Knowledge and understanding

*You need to know and understand:*

- K1 what your personal responsibilities with regard to health and safety in the working area are
- K2 what your legal responsibility for your own health and safety, and the health and safety of others is
- K3 what working practices ensure that the working environment is conducive to good health
- K4 what the approved codes of practice/working practices are and why it is important to follow them
- K5 how and when to complete a work task risk assessment
- K6 when specific site requirements are in place and what to do to comply with them
- K7 the different types of evaporative cooling and humidification systems
- K8 the principles of operation of the different types of evaporative cooling and humidification systems
- K9 the impact of atmospheric conditions on operation
- K10 the limitations of drift eliminators
- K11 the principles of water treatment regarding the different types of evaporative cooling and humidification systems
- K12 the health and safety implications of incorrect water treatment
- K13 the health and safety implications of incorrect system operation
- K14 problems encountered in the systems
- K15 water chemistry and microbiology applicable to the different types of evaporative cooling and humidification systems
- K16 what regulatory requirements apply
- K17 company operating procedures
- K18 which treatment methods are available and can be used
- K19 what control measures can be used for the water treatment programme for different types of evaporative cooling and humidification systems
- K20 what system conditions are relevant to the water treatment programme
- K21 how to apply your company's treatment processes
- K22 how to interpret schematic diagrams

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- K23 how to interpret survey outputs
- K24 how to evaluate the efficacy of the treatment programme and regulatory compliance
- K25 how to follow a performance monitoring programme
- K26 which methods for performance monitoring are available
- K27 what to do if performance is unsatisfactory
- K28 the range of potential corrective actions that may be employed for different types of evaporative cooling and humidification systems
- K29 what corrective actions you can take in accordance with company operating procedure
- K30 what to do if you cannot take the appropriate corrective action and who to report the information to
- K31 which corrective action to follow
- K32 what documentation to use
- K33 how to complete the documentation
- K34 who the relevant people are
- K35 how to provide the documentation

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### Additional Information

#### Glossary

##### **Evaporative cooling systems**

Includes: cooling towers, evaporative condensers, adiabatic chillers, evaporative humidifiers, spray/evaporative cooling

##### **Water treatment programmes**

Can include for any water system: chemical and non chemical processes, monitoring and inspection, sampling, equipment provision and servicing, legionella risk assessment, cleaning operations, remedial engineering works, other products and services associated with water systems

##### **Regulatory requirements**

Includes relevant health, safety and environmental regulations, COSHH, Codes of Practice, British, European and International standards, site procedures

##### **Company operating procedure**

Includes company requirements, instructions and method statements

##### **Documentation**

Includes analysis/report sheets, log book records

##### **Relevant people**

As defined in the programme design, log book, company procedures

##### **Methods of treatment**

Physical, chemical, monitoring, sampling

##### **Working practices**

Permit to work, confined space working, working at heights, manual handling, PPE, COSHH etc

##### **Problems encountered**

Scale, corrosion, fouling, microbiological, mechanical, environmental

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### **System conditions**

Physical, engineering, chemical, microbiological conditions

### **Control measures**

Physical, engineering, chemical, microbiological, monitoring, inspection

### **Water chemistry**

The chemistry involved with the provision, use and treatment of evaporative cooling processes

### **Design model**

Products, specification, parameters, limitations, installation requirements, service standards including company requirements, instructions, method statements, codes of practice, British, European and International standards

### **Survey outputs**

Risk assessment, sample and test results, survey forms, mechanical specifications, system objective

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**Relevant occupations** Engineering and manufacturing technologies; Manufacturing technologies; Process, Plant and Machine Operatives; Process Operatives

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**Suite** Water Treatment Management

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**Key words** Water; treatment; evaporating; systems