



Australian Government

Department of Education, Employment and Workplace Relations

NWP349B Monitor, operate and control incineration processes

Revision Number: 2

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Modification History

NWP349B Release 2: Layout adjusted. No changes to content.

NWP349B Release 1: Primary release.

Unit Descriptor

This unit of competency describes the outcomes required to monitor, operate and control incineration plant and to measure and report on system performance and process quality control. The ability to identify faults, determine and apply technical adjustments and produce technical reports are essential to performance.

Application of the Unit

This unit supports the attainment of skills and knowledge required for operational staff with a specific responsibility for ensuring that incineration processes in water treatment plants conform to organisational standards and comply with statutory requirements.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency. Performance criteria describe the required performance needed to demonstrate achievement of the element. Where *bold italicised* text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

| ELEMENT | PERFORMANCE CRITERIA |
|--|---|
| 1 Monitor incineration plant performance. | <p>1.1 Monitor test results and combustion processes to meet organisational procedures and statutory requirements.</p> <p>1.2 Identify and report process faults and the operational condition of <i>plant</i> according to <i>organisational and statutory requirements</i>.</p> <p>1.3 Select and check <i>equipment</i> and correctly fit and use personal protective equipment.</p> |
| 2 Operate and control processes. | <p>2.1 Carry out <i>routine plant inspections</i> according to organisational and plant requirements.</p> <p>2.2 Conduct and analyse process <i>tests</i> and compare performance to operational requirements.</p> <p>2.3 Make <i>system adjustments</i> to improve system performance according to organisational and statutory requirements.</p> <p>2.4 Collect, interpret and record process data and report according to organisational and plant requirements.</p> |
| 3 Compile process records. | <p>3.1 Compile <i>reports</i> from plant and system data to meet organisational procedures and statutory requirements.</p> <p>3.2 Report observations outside defined parameters for further action.</p> |

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- solve operational problems
- produce reports, logs, etc.
- use safety equipment and personal protective equipment
- interpret plans, charts and instructions
- interpret policies, procedures and standards
- communicate with employees and customers
- use communication equipment
- give and receive instructions
- determine chemical dosing requirements
- operate computerised equipment
- identify control system faults
- sample and test products

Required knowledge:

- coordination processes
- system layout
- system processes
- lock out procedures for mechanical and electrical installations
- policies, procedures and legislation
- relevant utilities and service bodies
- communication systems
- hazardous materials handling
- environmental aspects of wastewater treatment
- risk factors and potential hazards involved with chemical usage
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of site or plant
- pipes and fittings
- pumping and valving systems
- mechanical and electrical control systems

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The candidate should demonstrate the ability to monitor, operate and control incineration processes, including:

- conducting routine plant inspections
- taking samples and performing basic tests
- preparing and applying incineration processes according to instructions
- identifying and reporting system faults
- making basic system adjustments according to instructions
- completing required documentation

Context of and specific resources for assessment

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards, and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice
- a decision of competence only taken at the point when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be

authenticated and show that it represents competency demonstrated over a period of time

- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the operator, any cultural issues that may affect responses to the questions, and reflecting the requirements of the competency and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Plant may include:

- furnace feed conveyors
- furnace equipment
- combustion fans and equipment
- auxiliary fuel system
- ash transfer system
- ash disposal system
- furnace exhaust gas scrubbers

Organisational and statutory requirements may include:

- by-laws and organisational policies
- standard operating procedures
- environment protection
- occupational health and safety
- Australian Drinking Water Guidelines
- National Water Quality Management strategy
- chemicals
- dangerous goods
- lifts and cranes
- Environment Protection Authority regulations
- licensing agreements
- electrical

Inspection may include:

- inspection of:
 - fluidised furnaces
 - co-fired furnaces
 - fixed bed furnaces
- use of equipment, including:
 - electronic monitoring and metering systems
 - manual chart recording systems
 - basic hand tools
 - sampling and laboratory testing equipment
 - computerised equipment
 - communication equipment
 - personal protective equipment
- interaction and communication with other employees, other authorities and the general public
- visual observation
- implementation of reporting procedures that may also

include procedures for the implementation of by-laws, organisational policies and statutory requirements

Tests may include:

- water content
- flame temperature
- fuel to air ratios

System adjustments may include:

- loading rates
- centrifuge settings
- burner operation
- feed rate adjustments
- air ratio

Reports may include:

- plant performance data
- environmental reports
- centrifuge performance data
- chemical usage

Unit Sector(s)

Not applicable.

Competency field

Treatment.