



Australian Government

Department of Education, Employment and Workplace Relations

FPPREC210A Monitor and control chemical recovery operations

Release: 1

FPPREC210A Monitor and control chemical recovery operations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to monitor and control chemical recovery operations in the pulp and paper industry

General legislation, regulatory, licensing and certification requirements applicable to this unit are detailed in the range statement

Specific high risk (and non-high risk) load shifting licensing requirements for this unit may be applicable and are to be met separately and prior to the achievement of this unit

Application of the Unit

Application of the unit

This unit applies to operators who monitor and control chemical recovery operations in the pulp and paper industry. This work typically involves complex integrated equipment and continuous operations

This unit generally applies to those who:

- monitor and control processes
- monitor and maintain plant, and
- record and document performance data

to meet safety, quality and productivity requirements

It does not include starting up, shutting down or troubleshooting and rectifying chemical recovery operations

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Not Applicable

Employability Skills Information

Employability skills 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 performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor and control processes	1.1. Processes are monitored and controlled within Occupational Health and Safety (OHS) regulations, environmental and safe working requirements/practices, Standard Operating Procedures (SOP), and housekeeping requirements 1.2. Production requirements are checked at start of shift to plan day's activities as required 1.3. Operational status is confirmed by inspection, observations and other information 1.4. Supplies and supply systems are monitored and controlled to ensure availability and suitability 1.5. Required sampling and testing is conducted 1.6. Production and by-product storage is monitored and controlled 1.7. Process variables are monitored and controlled to ensure efficient operation 1.8. Operator level preventative maintenance schedules are carried out as required 1.9. Discharges are monitored and controlled
2. Monitor and maintain plant	2.1. Plant is monitored and maintained within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements 2.2. Process problems and equipment faults are identified 2.3. Process problems and equipment faults are rectified within limits of responsibility 2.4. Plant inspections are undertaken to optimise plant performance 2.5. Processes and equipment adjustments are made to optimise production and quality schedules and to comply with environmental licences
3. Record and document performance data	3.1. Performance data is recorded and documented within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements 3.2. Process and plant data is interpreted and recorded 3.3. Process problems and equipment faults are reported 3.4. Problems or variations with systems or product are communicated to relevant personnel 3.5. Hazardous conditions are documented and

ELEMENT**PERFORMANCE CRITERIA**

- communicated to relevant personnel
- 3.6. Problems with environmental releases are recorded and reported as required

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This describes the skills and knowledge required for this unit.

Required skills

- Uses required forms of communication in monitoring and controlling chemical recovery operations
- Reads and interprets required documentation, procedures and reports
- Accesses, navigates and enters computer-based information
- Interprets instruments, gauges and data recording equipment
- Identifies and actions problems within level of responsibility
- Takes samples, conducts tests, interprets and records results if required
- Uses measuring equipment as required
- Identifies and monitors process control points
- Carries out operator level maintenance as required
- Maintains situational awareness in the work area
- Operates high risk (and non-high risk) load shifting equipment as required
- Analyses and uses sensory information to adjust process to maintain safety, quality and productivity
- Uses electronic and other control systems to control equipment and processes as required

Required knowledge

- Procedures, regulations and legislative requirements relevant to chemical recovery operations including OHS, environmental including relevant sustainability requirements/practices, SOP, isolation procedures, safe working requirements, risks and hazard identification and housekeeping
- Relevant forms of communication
- Basic problem-solving techniques consistent with level of responsibility
- Sampling and testing processes for plant and system operations, and process monitoring - purpose, standards and procedures as per site agreements

REQUIRED SKILLS AND KNOWLEDGE

- Chemical recovery in-process tests and procedures
- Working knowledge of chemical recovery plant, processes, layout and associated services including operating parameters, variation and associated adjustments within level of responsibility
- Quality requirements
- Application of high risk (and non-high risk) load shifting equipment as required
- Sensory information that indicates a deviation from standard operating parameters
- Sufficient knowledge of electronic and other control systems, operation and application to make appropriate adjustments that control the chemical recovery operations, within level of responsibility

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

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

Evidence should be relevant to the work. It should satisfy the requirements of the elements and performance criteria and include consideration of:

- the required knowledge and skills tailored to the needs of the specific workplace
- applicable OHS regulations, environmental and safe working requirements/practices, SOP and housekeeping requirements
- applicable aspects of the range statement
- practical workplace demonstration of skills in monitoring and controlling chemical recovery operations

Context of and specific resources for assessment

A workplace assessment must be used to assess:

- the application of required knowledge on the job
- the application of skills on the job, over time and under a range of typical conditions that may be experienced in chemical recovery operations

Access to the full range of equipment involved in chemical recovery operations in a pulp or paper mill is required

Method of assessment

A combination of assessment methods should be used. The following examples are appropriate for this unit:

- observation of applied skills and knowledge on the job
- workplace demonstrations via a mock-up or simulation that replicate part/s of the job
- answers to written or verbal questions about specific skills and knowledge
- third-party reports from relevant and skilled personnel
- written evidence e.g. log sheet entries, checklist entries, test results

Assessment processes and techniques must be culturally appropriate and in keeping with the language

EVIDENCE GUIDE

and literacy capacity of the learner and the work being performed. This includes conducting an assessment in a manner that allows thoughts to be conveyed verbally so that the learner can both understand and be understood by the assessor (e.g. use plain English and terminology used on the job)

A holistic assessment with other units relevant to the pulp and paper industry, mill and job role is recommended

Additional information on approaches to assessment for the pulp and paper industry is provided in the Assessment Guidelines for this Training Package

Range Statement

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. 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) may also be included.

Productivity requirements may include:

- energy efficiency
- waste minimisation
- evaporation minimisation, including landfill and waste water reduction
- environmentally safe waste disposal
- consideration of resource utilisation, including fibre efficiency
- minimising delays
- chemical recovery maximisation
- meeting key performance indicators
- line speed
- handovers
- quality checks
- meeting output targets i.e. net tonnes per employee per annum
- machine/process time availability i.e. time the machine or process is making product

RANGE STATEMENT

- Chemical recovery processes may include:
- machine/process production rate
 - evaporator operations
 - condensate stripper
 - lime mud treatment
 - Wet Air Oxidation (WAO)
 - causticising plant operations
 - recovery boiler operations
 - direct alkali reduction system (DARS operations)
 - foul gas and condensate incineration
- Chemicals may include:
- white liquor
 - green liquor
 - black liquor
 - condensates
 - non-condensable gases
 - thick liquor
 - spent liquor
 - quench liquor
 - weak wash
 - anthraquinone (AQ)
 - caustic
 - magnesium oxide
 - sulphur

RANGE STATEMENT

Materials and supplies may include:

- steam
- compressed air
- chemicals
- water
- power

Equipment may include:

- power or steam generation
- pneumatic systems
- water supply systems and equipment
- process plant
- pumps and transfer equipment
- mechanical, hydraulic and electrical systems
- process monitoring and management equipment
- mobile equipment (e.g. skid steer, forklift, elevated work platform, loaders)
- computer systems
- electronic screens and alarms
- process control systems
- analogue and digital instruments
- fully automated, semi-automated, manually operated plant and equipment appropriate to chemical recovery operations

Electronic control systems may include:

- Digital Control System (DCS)
- touch screens
- robotics

Legislation, regulatory, licensing and certification requirements may include:

- OHS and environmental requirements (local, state and commonwealth)
- activity or task specific high risk (and non-high risk) load shifting licensing requirements
- hazardous chemical handling requirements

Documentation, procedures and reports may include:

- SOP
- quality procedures
- environmental sustainability requirements/practices
- plant manufacturing operating manuals
- work instructions and orders
- incident reports
- log sheets and shift reports
- oil or chemical spills and disposal guidelines
- plant isolation documentation
- safe work documentation (e.g. plant clearance, job safety analysis, permit systems)

RANGE STATEMENT

- emergency operational procedures (EMOs)
 - process and instrument diagrams
 - non-conformance reports
- Maintenance may include:
- operator level maintenance as per site agreement
 - maintenance systems
 - operator maintenance schedules
 - maintenance suppliers
 - proactive maintenance strategies e.g. Total Productive Maintenance (TPM), Reliability Centred Maintenance (RCM)
- Actions may include:
- process adjustments
 - reporting to authorised person
 - rectifying problem within level of responsibility
- Communications may include interaction with:
- team members
 - internal or external customers and suppliers
 - maintenance services
 - production/services co-ordinator
 - operational management
 - statutory authorities
- Situational awareness may include awareness of:
- traffic
 - pedestrians
 - location of equipment
 - product
 - hazards
 - obstruction
 - unexpected movement
- Sensory information may include:
- visual
 - sound
 - feel
 - touch
 - smell
 - vibration
 - temperature
- Forms of communications may include:
- written e.g. log books, emails, incident and other reports, run sheets, data entry
 - reading and interpreting documentation e.g.

RANGE STATEMENT

SOP, manuals, checklists, drawings

- verbal e.g. radio skills, telephone, face to face, handover
- non-verbal e.g. hand signals, alarms, observations
- signage e.g. safety, access

Unit Sector(s)

Not Applicable