



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FPPREC330A Co-ordinate and implement chemical recovery shutdowns**

**Release: 1**

## **FPPREC330A Co-ordinate and implement chemical recovery shutdowns**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit descriptor**

This unit describes the outcomes required to co-ordinate and implement chemical recovery shutdowns 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 co-ordinate and implement chemical recovery shutdowns in the pulp and paper industry. This work typically involves complex integrated equipment and continuous operations

This unit generally applies to those who:

- assess causes and effects of shutdowns
- implement shutdown procedures, and
- record and report shutdown information

to meet safety, quality and productivity requirements

It does not include starting up, monitoring, controlling or troubleshooting and rectifying chemical recovery plant 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. Assess causes and effects of shutdown  | <ul style="list-style-type: none"><li>1.1. Causes and effects of shutdown are assessed within Occupational Health and Safety (OHS) regulations, environmental and safe working requirements/practices, Standard Operating Procedures (SOP), and housekeeping requirements</li><li>1.2. Work area instructions or maintenance schedules are used to co-ordinate a planned shutdown</li><li>1.3. Cause of unplanned shutdown is identified and located</li><li>1.4. Effects of unplanned shutdown are assessed to determine impact on operations</li><li>1.5. Unplanned shutdown is communicated as required</li></ul> |
| 2. Implement shutdown procedures          | <ul style="list-style-type: none"><li>2.1. Shutdown procedures are implemented within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements</li><li>2.2. Planned shutdown is implemented</li><li>2.3. Unplanned shutdown is responded to and rectified</li><li>2.4. Isolation requirements are implemented as required</li><li>2.5. Shutdown information is communicated to relevant personnel as required</li></ul>                                                                                                                                            |
| 3. Record and report shutdown information | <ul style="list-style-type: none"><li>3.1. Shutdown information is recorded and reported within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements</li><li>3.2. Shutdown information is recorded, including corrective action as required</li><li>3.3. Shutdown information is reported to relevant personnel</li></ul>                                                                                                                                                                                                                                      |

## 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 co-ordinating and implementing

## REQUIRED SKILLS AND KNOWLEDGE

chemical recovery shutdowns

- Reads and interprets required documentation, procedures and reports
- Identifies sources of operational data
- Accesses, navigates and enters computer-based information
- Interprets instruments, gauges and data recording equipment
- Identifies and actions problems within level of responsibility
- Identifies and monitors process control points
- Co-ordinates and plans shutdown activity
- Identifies and responds appropriately to shutdown causes
- Respond to problems associated with plant shutdown and unplanned shutdown to ensure safety quality and productivity
- 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 and co-ordinate 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
- Required responses to all unplanned shutdowns to ensure safety, quality and productivity
- Working knowledge of chemical recovery operations, processes, layout and associated services sufficient to carry out shutdown activities within level of responsibility
- Effects of shutdowns on the rest of the system
- Types, causes and effects of chemical recovery plant shutdowns
- Process and procedures for plant shutdowns and unplanned shutdowns
- Plant and machinery functions and operations
- Emergency procedures and responses
- Impact of inappropriate responses
- 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 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 co-ordinating and implementing chemical recovery shutdowns

#### 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 integrated continuous manufacturing of 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**

- machine/process production rate

## RANGE STATEMENT

Chemical recovery processes may include:

- 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

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

## RANGE STATEMENT

|                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                | <ul style="list-style-type: none"><li>• fully automated, semi-automated, manually operated plant and equipment appropriate to chemical recovery operations</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Electronic control systems may include:                                        | <ul style="list-style-type: none"><li>• Digital Control System (DCS)</li><li>• touch screens</li><li>• robotics</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Legislation, regulatory, licensing and certification requirements may include: | <ul style="list-style-type: none"><li>• OHS and environmental requirements (local, state and commonwealth)</li><li>• activity or task specific high risk (and non-high risk) load shifting licensing requirements</li><li>• hazardous chemical handling</li></ul>                                                                                                                                                                                                                                                                                                                                                                      |
| Documentation, procedures and reports may include:                             | <ul style="list-style-type: none"><li>• SOP</li><li>• quality procedures</li><li>• environmental sustainability requirements/practices</li><li>• plant manufacturing operating manuals</li><li>• work instructions and orders</li><li>• incident reports</li><li>• log sheets and shift reports</li><li>• oil or chemical spills and disposal guidelines</li><li>• plant isolation documentation</li><li>• safe work documentation (e.g. plant clearance, job safety analysis, permit systems)</li><li>• emergency operational procedures (EMOs)</li><li>• process and instrument diagrams</li><li>• non-conformance reports</li></ul> |
| Maintenance may include:                                                       | <ul style="list-style-type: none"><li>• operator level maintenance as per site agreement</li><li>• maintenance systems</li><li>• operator maintenance schedules</li><li>• maintenance suppliers</li><li>• proactive maintenance strategies e.g. Total Productive Maintenance (TPM), Reliability Centred Maintenance (RCM)</li></ul>                                                                                                                                                                                                                                                                                                    |
| Actions may include:                                                           | <ul style="list-style-type: none"><li>• process adjustments</li><li>• reporting to authorised person</li><li>• rectifying problem within level of responsibility</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Communications may include                                                     | interaction with: <ul style="list-style-type: none"><li>• team members</li><li>• internal or external customers and suppliers</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## RANGE STATEMENT

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      | <ul style="list-style-type: none"><li>• maintenance services</li><li>• production/services co-ordinator</li><li>• operational management</li><li>• statutory authorities</li></ul>                                                                                                                                                                                                                     |
| Situational awareness may include    | <p>awareness of:</p> <ul style="list-style-type: none"><li>• traffic</li><li>• pedestrians</li><li>• location of equipment</li><li>• product</li><li>• hazards</li><li>• obstruction</li><li>• unexpected movement</li></ul>                                                                                                                                                                           |
| Sensory information may include:     | <ul style="list-style-type: none"><li>• visual</li><li>• sound</li><li>• feel</li><li>• touch</li><li>• smell</li><li>• vibration</li><li>• temperature</li></ul>                                                                                                                                                                                                                                      |
| Forms of communications may include: | <ul style="list-style-type: none"><li>• written e.g. log books, emails, incident and other reports, run sheets, data entry</li><li>• reading and interpreting documentation e.g. SOP, manuals, checklists, drawings</li><li>• verbal e.g. radio skills, telephone, face to face, handover</li><li>• non-verbal e.g. hand signals, alarms, observations</li><li>• signage e.g. safety, access</li></ul> |

## Unit Sector(s)

Not Applicable