Australian Government

Department of Education, Employment and Workplace Relations

FPPPUL440A Troubleshoot and rectify pulping processes

Release: 1

FPPPUL440A Troubleshoot and rectify pulping processes

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to troubleshoot and rectify pulping processes 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 troubleshoot and rectify pulping processes in the pulp and paper industry. This work typically involves complex integrated equipment and continuous operations

This unit generally applies to those who:

- identify and analyse the causes of faults
- rectify plant and product quality faults, and
- record and report process performance and product quality data

to meet safety, quality and productivity requirements

It does not include monitoring and controlling, starting up or shutting down pulping 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. Identify and analyse causes of faults	1.1. Causes of faults are identified and analysed within Occupational Health and Safety (OHS) regulations, environmental and safe working requirements/practices, Standard Operating Procedures (SOP), and housekeeping requirements
	1.2. Alarms are interpreted to determine fault type and location
	1.3. Sampling and testing results are interpreted to identify variations from specifications or schedule
	1.4. Cause and source of fault is identified and located using appropriate diagnostic procedures
	1.5. Relevant sources of information are accessed and interpreted to assist analysis
2. Rectify plant faults	2.1. Plant faults are rectified within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements
	2.2. Operator level on-line adjustments are conducted
	2.3. Plant is shut down and isolation procedures are implemented prior to fault rectification
	2.4. Faulty plant is isolated, by-passed, repaired or replaced as required
	2.5. Plant is returned to normal operation
	2.6. Verification is communicated to relevant personnel
3. Rectify product quality faults	3.1. Product quality faults are rectified within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements
	3.2. Quality faults or variations are identified by observation, systematic sampling and testing
	3.3. Test results are interpreted and operations adjusted to correct faults
	3.4. Faults and causes are rectified if appropriate, or recommendations made for further action
	3.5. Out-of-specification product is managed
4. Record and report process performance and product quality data	4.1. Process performance and product quality data is recorded and reported within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements

ELEMENT	PERFORMANCE CRITERIA
	4.2. Variations from specification of product are documented
	4.3. Process variation and faults are recorded
	4.4. Actions undertaken to troubleshoot and rectify faults are recorded
	4.5. Relevant information is communicated to appropriate personnel

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 troubleshooting and rectifying pulping processes
- Communicates effectively with personnel to assist with analysis and resolution of operational problems
- 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 systems, quality and equipment faults within level of responsibility
- Assists others to identify and resolve operational problems in the workplace
- Identifies causes and effects of faults and corrective action on associated processes
- Selects and uses appropriate troubleshooting methods
- Takes timely corrective action to maximise safety, quality and productivity
- Undertakes necessary calculations to aid troubleshooting as required
- Identifies, accesses and interprets relevant historical and operational data and information
- Takes samples, conducts tests, interprets and records results if required
- Uses measuring equipment as required
- Maintains situational awareness in the work area
- Handles emergencies or crash shutdowns
- Operates high risk (and non-high risk) load shifting equipment as required
- Uses electronic and other control systems to control equipment and processes as required

REQUIRED SKILLS AND KNOWLEDGE

- Analyses and uses sensory information to adjust process to maximise safety, quality and productivity

Required knowledge

- Procedures, regulations and legislative requirements relevant to pulping operations including OHS, environmental including relevant sustainability requirements/practices, SOP, isolation procedures, safe working requirements, risks and hazard identification and housekeeping
- Use and handling requirements of chemicals used; their purpose, effects, MSDS and SOP
- Relevant forms of communication
- Detailed knowledge of pulping plant, processes and associated services sufficient to troubleshoot including:
  - plant layout
  - theory of operation
  - causes and effects of adjustments made to pulping plant and processes
  - relationships between pulping plant, processes and associated services
- An appropriate range of troubleshooting methods
- Sampling and testing process for plant and system operations, and process monitoring - purpose, standards and procedures as per site agreements
- Causes and effects of unplanned shutdown and appropriate responses
- Maintenance system as it applies to pulping operations
- 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 pulping 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	Evidence should be relevant to the work. It should satisfy the requirements of the elements and

EVIDENCE GUIDE

competency in this unit

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 troubleshooting and rectifying pulping processes

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 pulping operations

Access to the full range of equipment involved in integrated continuous manufacturing of pulping plant 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 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

EVIDENCE GUIDE

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
- machine/process production rate

Operational parameters may include:

- flows
- temperatures
- pressures
- through put
- consistencies
- amps
- set points
- valve settings

RANGE STATEMENT

- levels
- interlocks

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Storage levels may include:	• vats • chests • silos • tanks • bins • piles
Pulping processes - chemical, mechanical and semi-chemical pulping may include:	• bleaching plant operations • refining • chip preparation • cleaning or washing systems • chemical preparation and treatment • pulp lapping production • stock distribution and storage • digester operations • mechanical pulping systems
Products of these processes may include:	• bleached or unbleached pulp • fluff pulp • crumbed pulp • baled, rolled or sheet pulp • slushed pulp
Materials and supplies may include:	• woodchips • pulp • steam • water • chemicals • power
Equipment may include:	• power and steam systems • hydraulic and electrical systems • chemical delivery and processing • conveyors and pump distribution equipment • pneumatic systems • process plant • materials handling equipment • hand and power tools • computer systems • electronic screens and alarms • process control systems • analogue and digital instruments • fully automated, semi-automated, manually operated plant and equipment appropriate to

RANGE STATEMENT

	pulping 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 • relevant endorsed licences • hazardous chemical handling • air and gas discharges • safety instructions
Documentation, procedures and reports may include:	• SOP • work instructions or purchase orders • environmental sustainability requirements/practices • plant manufacturing operating manuals • quality procedures • oil or chemical spills and disposal guidelines • plant isolation documentation • safe work documentation e.g. plant clearance, job safety analysis, permit systems • log sheets and shift reports • work orders • delivery or distribution documentation • tally or production records • incident reports • Materials Safety Data Sheets (MSDS) • process and instrumentation diagrams
Maintenance may include:	• operator level maintenance as per site agreement • operator maintenance schedules • calibrating test equipment • maintenance systems • 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

RANGE STATEMENT

Communications may include	interaction with: • internal or external • customers and suppliers • team members • maintenance services • 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. 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