Australian Government

Department of Education, Employment and Workplace Relations

FPPWEO440A Troubleshoot and rectify wet end systems

Release: 1

FPPWEO440A Troubleshoot and rectify wet end systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to troubleshoot and rectify wet end systems 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 wet end systems 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 systems and quality faults
- rectify systems, equipment faults
- rectify 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 wet end 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 systems and quality faults	1.1. Causes of system and quality 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. Alarm systems and observations are interpreted to determine fault type and location
	1.3. Routine inspections of plant and processes are made to identify faults
	1.4. Sampling and testing results are interpreted to identify variations from operating parameters
	1.5. Cause and source of problem is identified and located
	1.6. Relevant sources of information are accessed and interpreted to assist analysis
	1.7. Information is communicated to relevant personnel
2. Rectify systems and equipment faults	2.1. Systems and equipment faults are rectified within OHS regulations, environmental and safe working requirements/practices, SOP, and housekeeping requirements
	2.2. Equipment is shut down and isolated prior to fault rectification, if required
	2.3. Faulty equipment is by-passed where the process allows
	2.4. Faulty equipment is repaired or replaced as required
	2.5. Corrective adjustments are made to equipment
	2.6. Operator level maintenance is undertaken as required
	2.7. Restoration to normal operation is verified and 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. Product quality faults or variations are identified by observation inspection and testing
	3.3. Samples for a range of tests are taken
	3.4. Test results are interpreted and processes are adjusted to correct variations from specification
4. Record and report process performance	4.1. Process performance and product quality data is recorded and reported within OHS regulations,

ELEMENT	PERFORMANCE CRITERIA
and product quality data	environmental and safe working requirements/practices, SOP, and housekeeping requirements 4.2. Variations from specifications are documented 4.3. Performance variations are documented 4.4. Corrective actions are recorded 4.5. Out-of-specification product is dealt with 4.6. 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

- Identifies, accesses and interprets relevant historical and operational data and information
- Uses required forms of communication in troubleshooting and rectifying wet end systems
- 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
- Takes samples, conducts tests, interprets and records results
- Uses measuring equipment 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 maximise safety, quality and productivity

REQUIRED SKILLS AND KNOWLEDGE

- Uses electronic and other control systems to control equipment and processes as required

Required knowledge

- Procedures, regulations and legislative requirements relevant to wet end 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 wet end plant, processes and associated services sufficient to troubleshoot including:
  - plant layout
  - theory of operation
  - causes and effects of adjustments made to wet end plant and processes
  - relationships between wet end 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
- Mill maintenance system as it applies to wet end plant and processes
- 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 wet end 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 troubleshooting and rectifying wet end systems

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 wet end operations

Access to the full range of equipment involved in integrated continuous manufacturing wet end 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

EVIDENCE GUIDE

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
- machine/process production rate

RANGE STATEMENT

Systems and functions in wet end operations may include:	• stock approach systems • forming system • pressing systems • cleaning and screening system
Materials and supplies may include:	• water • air • stock • chemicals • additives • steam • machine clothing • baled pulp
Equipment may include:	• screens • forming section • water, chemical, vacuum or stock systems • former • pumps • consistency meter • flow meter • refiner • control valves • cleaning showers • chemical showers • presses • cleaners • waste hood recovery unit • computer systems • electronic screens and alarms • process control systems • fully automated, semi-automated, manually operated plant and equipment appropriate to the wet end process
Electronic control systems may	• Digital Control System (DCS)

RANGE STATEMENT

include:	• touch screens • robotics
Hazards and risks involved in wet end operations may include:	• steam and/or gas leaks • fires • nip points • compressed air • hot surfaces • electrical • entanglement • vehicle movement • slip hazards/falls • energy • pressures • chemicals • fumes • confined spaces • dust
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
Documentation, procedures and reports may include:	• SOP • site policy and procedures • environmental sustainability requirements/practices • plant manufacturing operating manuals • confined space requirements • vendor documentation • reference manual • grade specifications • quality procedures • oil or chemical spills and disposal guidelines • plant isolation documentation • housekeeping • safe work documentation e.g. plant clearance, job safety analysis, permit systems • maintenance logs • job sheets • operating log • production instructions • Materials Safety Data Sheets (MSDS)

RANGE STATEMENT

Maintenance may include:	• process and instrument diagrams • operator level maintenance as per site agreements • operator maintenance schedules • maintenance systems • maintenance suppliers • pro-active 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 • production/service co-ordinators • internal/external customers and suppliers • maintenance services • operational management • statutory authorities

RANGE STATEMENT

Situational awareness may include	awareness of: • traffic • pedestrians • location of equipment • product • hazards • obstructions • 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. standard operating procedures, 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