



Australian Government

Department of Education, Employment and Workplace Relations

SUGPOES2A Operate an extraction station

Revision Number: 1

SUGPOES2A Operate an extraction station

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This is a Specialist unit. It covers the preparation and operation of an extraction station. In order to demonstrate competence in this unit the operator also be competent to operate turbines and reciprocating engines where required.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Element	Performance criteria
1. Prepare the extraction process for operation	<ul style="list-style-type: none">1.1 Cane is confirmed and available to meet production requirements1.2 Services are confirmed as available and ready for operation1.3 Equipment is checked to confirm readiness for use1.4 The extraction process is set to meet production requirements
2. Operate and monitor the extraction process	<ul style="list-style-type: none">2.1 The extraction process is started up and operated according to company procedures2.2 Control points are monitored to confirm performance is maintained within specification2.3 Bagasse meets specifications2.4 Equipment is monitored to confirm operating condition2.5 Out-of-specification bagasse, process and equipment performance is identified, rectified and/or reported according to workplace reporting procedure2.6 The workplace meets housekeeping standards
3. Handover the extraction station	<ul style="list-style-type: none">3.1 Workplace records are maintained in accordance with workplace procedures3.2 Handover is carried out according to workplace procedure3.3 Extraction station operators are aware of system and related equipment status at completion of handover
4. Shut down the extraction system	<ul style="list-style-type: none">4.1 The appropriate shut down procedure is identified4.2 The extraction system is shut down according to workplace procedures4.3 The extraction system is prepared for storage in shut down mode4.4 Maintenance requirements are identified and reported according to workplace reporting procedure

Required Skills and Knowledge

Not applicable.

Evidence Guide

Evidence guide

The assessment process must address all of the following items of evidence.

Ability to:

1. Access workplace information to identify production requirements
2. Select, fit and use personal protective clothing and/or equipment
3. Confirm supply of necessary materials and services
4. Confirm equipment status and condition
5. Liaise with other work areas - specifically boilers and evaporator station
6. Demonstrate start up procedures after an extended stop and after a short stop
7. Start up and operate in both automatic and manual modes
8. Monitor the process and equipment operation to maintain the process within the required parameters. This typically involves monitoring:
 - temperatures
 - steam pressure
 - throughput
 - chute height
 - torques/mill loads
 - added water flows
 - feeding characteristics of cane
 - equipment condition including lubrication systems and vibration levels
9. Monitor supply and flow of cane to the process and bagasse and juice from the process
10. Take corrective action in response to out-of-specification results
11. Report and/or record corrective action as required
12. Record workplace information
13. Demonstrate shift handover procedure
14. Shut down equipment in response to an emergency situation
15. Demonstrate an operational shut down procedure
16. Prepare equipment for cleaning/maintenance
17. Maintain work area to meet housekeeping standards

May include the ability to:

18. Use process control systems
19. Clean equipment
20. Take samples and conduct tests

Knowledge of:

21. Purpose and basic principles of extraction including shredder operation, mills and diffusers as required in the workplace
22. The circuit flow of this process and relationship between extraction, boilers and evaporation
23. Effect on extraction of:
 - cane quality
 - added water
 - mill operation
24. Consequences of poor lubrication

25. Role of cooling water for equipment operation
26. Quality characteristics of bagasse and their effect on boiler operation
27. Equipment purpose and basic operating principles of extraction equipment
28. Services used
29. Operating requirements and parameters
30. Significance and method of monitoring control points within the process
31. Common causes of variation and corrective action required
32. Hazards and controls
33. Purpose and limitations of protective clothing and equipment
34. Lock out and tag out procedures
35. Requirements of both operational and long term shut down conditions to ensure the equipment is left in a safe state for the period of the shutdown and to minimise any delays in future start up
36. Procedures and responsibility for reporting problems
37. Environmental issues and controls
38. Waste handling requirements and procedures
39. Recording requirements and procedures

May include knowledge of:

40. Basic operating principles of process control where relevant. This includes the relationship between control panels and systems and the physical equipment
41. Cleaning procedures
42. Sampling and testing procedures

Relationship with other standards

Pre-requisite units

The pre-requisites for this competency standard are:

- SUGPOTB2A Operate a turbine

Co-assessment of related units

Other units of competency relevant to the work role should be assessed in conjunction with this unit. This may include:

- SUGPCPS2A Collect and prepare samples
- SUGPPST2A Conduct standard tests
- SUGZPCI2A Operate a process control interface

Resources required for assessment

Assessment must occur in a real or simulated workplace where the assessee has access to:

- Operating procedures and related advice on equipment operation including advice on safe work practices and environmental requirements
- Personal protective clothing and equipment
- Product and process specifications and operating parameters
- Extraction station equipment
- Materials and services as required
- Material Safety Data Sheets where appropriate
- Housekeeping standards and procedures
- Advice on environmental management issues relevant to work responsibilities
- Workplace information recording systems, requirements and procedures

They may also require access to:

- Cleaning procedures, sampling schedule and procedures and maintenance procedures and tools depending on the work requirements.

Assessment requirements

For information on how to assess this competency standard and who can assess, refer to the Assessment Guidelines for this Training Package.

Range Statement

Range statement

The range statement indicates the context for demonstrating competence. This statement is a guide and unless otherwise indicated, items may or may not apply as required by the work context.

- Work is carried out in accordance with company policies and procedures, manufacturer's recommendations, legislative requirements, codes of practice and industrial awards and agreements. Codes of practice include the Sugar Milling Operations Industry Code of Practice
- Workplace information can include Standard Operating Procedures (SOPs), specifications, production schedules and manufacturer's specifications
- Extraction equipment may include shredder, cane carriers, mills, diffuser, juice pumps, juice screen, lubrication systems, cooling water system, maceration system, steam turbines and hydraulic drives
- Confirming equipment status involves conducting relevant pre-start checks, confirming that cleaning standards are met, all safety guards are in place and equipment is operational
- Services may include power, steam, water, compressed and instrumentation air
- Operation and monitoring of equipment and processes typically requires the use of control panels and systems
- Services may include power, water, compressed and instrumentation air
- Monitoring the process may involve the use of production data such as performance control charts
- Control points refer to those key points in a work process which must be monitored and controlled
- Work may require the ability to work within a team environment
- Information systems may be print or screen based
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Unit Sector(s)

Not applicable.