

APPLY PRINCIPLES OF DAIRY PLANT UTILITIES

ISCED UNIT CODE: 0721 541 06A

TVET CDACC UNIT CODE: DA/OS/PM/CC/02/6/MA

UNIT DESCRIPTION

This unit specifies the competencies required by a Dairy Plant Technologist level 6 to apply Dairy Plant Utilities Principle. It involves applying unit operations principles, steam generation, refrigeration, pneumatic, waste management and water management principles.

ELEMENTS AND PERFORMANCE CRITERIA

| ELEMENT | PERFORMANCE CRITERIA |
|---|--|
| These describe the key outcomes which make up workplace functions | These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i> |
| 1. Apply steam generation principles | 1.1 Steam is generated in accordance with steam boiler operation manual. 1.2 Steam is distributed as per work requirement 1.3 Steam is utilised as per work requirement 1.4 Steam generation system is maintained as per steam boiler operation manual. 1.5 Steam generation system records are updated as per work requirement. |
| 2. Apply refrigeration principles | 2.1 Refrigeration system is operated as per manufacturer's instructions. 2.2 Refrigeration system is maintained as per steam boiler operation manual 2.3 Chilled water is conveyed as per operation guidelines. 2.4 Refrigeration records are updated as per work requirement. |
| 3. Apply pneumatic principles | 3.1 Compressed air is generated as per work requirement 3.2 Compressed air is conveyed as per safety guidelines. 3.3 Compressed air is utilized as per work requirement 3.4 Vacuum is generated as per work requirement. 3.5 Vacuum is utilized in Machine/ equipment actuation. 3.6 Pneumatic system records are updated as per work instructions. |
| 4. Apply waste management principles | 4.1 Dairy waste is segregated as per NEMA guidelines. 4.2 Dairy waste is treated as per NEMA guidelines 4.3 Treated dairy waste is analysed as per NEMA guidelines. |

| | |
|--------------------------------------|--|
| 5. Apply water management principles | 5.1 Water sources are identified as per work requirements 5.2 Water quality is analysed as per Water Regulatory Authority 5.3 Water is utilized as per work requirements |
|--------------------------------------|--|

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required knowledge

The individual needs to demonstrate knowledge of:

- principles of steam generation
- Principles of refrigeration system
- Principles of pneumatic
- Waste management principles
- Dairy utilities operation

Required Skills

The individual needs to demonstrate the following skills:

- Communication.
- Dairy utilities operation
- Time management.
- Numeracy.
- Observation.
- Digital literacy.

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

| | |
|-----------------------------------|--|
| 1. Critical aspects of competency | Assessment requires evidence that the candidate <ul style="list-style-type: none"> 1.1 Generated steam in accordance with steam boiler operation manual. 1.2 Distributed steam as per work requirement 1.3 Utilised steam as per work requirement |
|-----------------------------------|--|

| | |
|--|---|
| | <p>1.4 Maintained steam generation system as per steam boiler operation manual.</p> <p>1.5 Operated refrigeration system as per manufacturer's instructions.</p> <p>1.6 Maintained refrigeration system as per steam boiler operation manual</p> <p>1.7 Conveyed chilled water as per operation guidelines.</p> <p>1.8 Generated compressed air as per work requirement</p> <p>1.9 Conveyed compressed air as per safety guidelines.</p> <p>1.10 Utilized Compressed air as per work requirement</p> <p>1.11 Segregated dairy waste as per NEMA guidelines.</p> |
| 2. Resource implication | <p>The following resources should be provided:</p> <p>2.1 Access to relevant workplace where assessment can take place</p> <p>2.2 Appropriately simulated environment where assessment can take place</p> <p>2.3 Materials relevant to the proposed assessment activity or tasks</p> |
| 3. Method of assessment | <p>Competency in this unit may be assessed through:</p> <p>3.1 Practical assessment</p> <p>3.2 Oral questioning</p> <p>3.3 Written tests</p> |
| 4. Context of assessment | <p>4.1 Competency elements must be assessed in a safe working environment</p> <p>4.2 Assessment may be conducted in a workplace or simulated environment</p> |
| 5. Guidance information for assessment | <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p> |