



Australian Government

AMPREN301 Operate and monitor a batch rendering process

Release: 1

AMPREN301 Operate and monitor a batch rendering process

Modification History

Release	Comments
Release 1	This version released with AMP Australian Meat Processing Training Package Version 7.0.

Application

This unit of competency describes the skills and knowledge required to operate a batch cooker, including preparation, loading raw material, operation, monitoring and shut down.

This unit applies to individuals who work under broad direction in an industrial rendering plant and who are responsible for operating and monitoring a batch rendering process. It includes safety compliance using Hazard Analysis and Critical Control Point (HACCP) techniques, process and product quality requirements, and solving problems that arise with the process.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety, environmental and meat rendering regulations, legislation and standards that apply to the workplace.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Rendering (REN)

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.

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1. Prepare to render raw materials	1.1 Confirm product specifications, raw material supply and set cooker parameters 1.2 Identify hazards, assess and control risks according to workplace health and safety procedures 1.3 Identify food safety hazards, assess and control risks according to HACCP principles 1.4 Select and fit personal protective equipment and contamination control clothing 1.5 Undertake preoperational checks of machinery and equipment according to workplace procedures and manufacturer requirements 1.6 Clean and sanitise tools and equipment according to contamination control 1.7 Load raw materials into cooker according to safety and contamination control requirements
2. Render raw materials	2.1 Monitor cooker equipment and adjust temperature according to product and health and safety requirements 2.2 Monitor duration and temperature to achieve the required end point prior to discharge of product 2.3 Check quality specifications are met and adjust outflow according to workplace requirements 2.4 Apply pressure to optimal temperature according to workplace and regulatory requirements 2.5 Separate solid material from tallow according to workplace procedures 2.6 Operate meat meal size reduction equipment according to workplace procedures

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
3. Monitor rendering and separation process and unload batch cooker	3.1 Take samples and test batch to ensure product is rendered to specifications 3.2 Monitor vapours to ensure they are condensed in accordance with regulatory requirements 3.3 Monitor non-condensed emissions to scrubber, bio-filter and/or after burner 3.4 Monitor waste water discharge and other environmental emissions according to workplace procedures 3.5 Reuse under rendered product or discard faulty products according to workplace and environmental guidelines 3.6 Empty cooker according to workplace health and safety requirements
4. Shut down the batch rendering process	4.1 Clean batch cooker equipment and report maintenance requirements 4.2 Identify the appropriate shutdown procedure 4.3 Shut the process down safely according to operating procedures 4.4 Identify and report maintenance requirements in line with workplace procedures 4.5 Maintain workplace records in appropriate format

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret operating manuals for batch rendering equipment
Writing	Complete records using industry terminology
Oral Communication	Use open and closed questions to clarify information
Numeracy	Estimate and measure volume (mls, L) , time (hrs, mins), temperature (degrees Celsius) and pressure (psi)

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AMPREN301 Operate and monitor a batch rendering process	AMPA3082 Operate batch cooker	Unit merged with AMPA3084 Operate press Unit title and code updated to better reflect work task New Performance criteria added to Element 1 Other Performance criteria revised for clarity Previous Element 4 merged with Element 2 Previous Element 3 split into two elements with additional PC added Foundation skills updated Performance Evidence, Knowledge Evidence and Assessment Conditions updated	Not equivalent
AMPREN301 Operate and monitor a batch rendering process	AMPA3084 Operate press	Unit merged with AMPA3082 Operate batch cooker Unit title and code updated to better reflect work task	Not equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5e2e56b7-698f-4822-84bb-25adbb8443a7>

Assessment Requirements for AMPREN301 Operate and monitor a batch rendering process

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has set up, operated, monitored and shut down industrial batch rendering processes to convert raw materials into finished products according to specific work orders on at least two occasions.

For each process, there must be evidence that the individual has:

- confirmed the product quantity and quality requirements
- identified at least three food safety hazards, assessed and controlled risk using Hazard Analysis and Critical Control Point (HACCP) principles
- identified at least three safety hazards, assessed and controlled risk using workplace health and safety procedures
- selected and correctly fitted appropriate personal protective equipment (PPE) and clothing required for worker safety and food contamination control
- checked raw materials, including correct labels, temperature, moisture, particle size and colour, set up and calibrated rendering equipment, including temperature, and rendering duration
- loaded and unloaded raw materials, and monitored and adjusted their flow and quality according to product requirements
- observed temperature and pressure gauges and adjusted equipment to meet product and safety requirements
- collected and tested at least three product samples to ensure rendered specifications are met
- identified and taken corrective action for two of the following:
 - over-rendering
 - under-rendering
 - spills
 - cross contamination
- applied liquid discharge management requirements

- monitored environmental emissions according to workplace and Environmental Protection Agency (EPA) requirements, including odour control and one of the following:
 - waste water
 - heat recovery
 - noise
- communicated verbally on batch rendering process, product or equipment using industry terminology with a supervisor, and at least one of the following:
 - maintenance team member
 - quality assurance team member
 - environmental management team member
- completed production records, including product and equipment issues, according to workplace requirements.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- basic operating principles of the batch rendering process
- features and functions of batch rendering machinery and equipment, including:
 - manufacturer and workplace instructions for safe operation
 - control panels and ancillary controls
 - operating capacities, efficiencies and applications
 - location and purpose of guards, rails and sensors
 - feedback instrumentation
- services required for operating a batch rendering process, including:
 - compressed air
 - electricity and water
 - workplace health and safety requirements
- key features of HACCP techniques related to batch rendering processes
- workplace procedures for safe movement of workers and visitors in and around the plant, rendering machinery and equipment
- features, benefits, limitations, and correct fit of PPE for batch rendering processes
- raw materials quality requirements, including:
 - temperature
 - particle size
- cooked meat product requirements, including:
 - moisture content
 - structure, including friability, density
- key features of quality assurance aspects of cooked product, including:
 - colour and density of cooked products
 - end-point temperature

- correct level of moisture content
- permissible bacteria types and quantity/quality requirements of finished products including:
 - tallow moisture, insolubles and Free Fatty Acids (FFA)
 - meat meal moisture, fat content, protein, microbiological and physical contamination
 - implications on product quality and productivity of incorrect load in cooker
- effects of over-rendering and causes of typical faults and how they can be rectified according to workplace requirements, including:
 - bleached colour of the tallow
 - effect of fines on tallow quality
 - damage to amino acids
- AS5008 Hygienic Rendering of Animal Products
- Australian Renderers Association's Code of Practice for Hygienic Rendering of Animal Products
- workplace cleaning and maintenance requirements for batch cooking plant and equipment
- workplace and EPA requirements for monitoring environmental emissions, including odour control, waste water, heat recovery and noise as applicable.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a meat rendering plant or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - industrial batch cooking plant and equipment required for the tasks specified in the performance evidence
 - raw materials specified in the performance evidence
 - PPE and contamination control equipment and clothing required for the tasks specified in the performance evidence
- specifications:
 - two batch cooking work orders stipulated in the performance evidence
 - workplace procedures for a batch cooking process and operation of plant and equipment stipulated in the performance evidence
 - workplace procedures for worker safety and contamination control
- relationships:
 - supervisor and others stipulated in the performance evidence
- timeframes:
 - competency must be demonstrated at the normal rate of production for the rendering plant.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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