



Australian Government

Department of Education, Employment and Workplace Relations

FDFST5002A Identify and implement required process control for a food processing operation

Release: 2

FDFST5002A Identify and implement required process control for a food processing operation

Modification History

April 2012: Minor typographical corrections.

Unit Descriptor

This unit covers the skills and knowledge required to identify and implement the required process control system for a food production process.

Application of the Unit

This unit applies to food science and technology personnel who have roles in product design, quality assurance and production management. The unit typically applies to staff who have responsibility for maintaining product safety, quality and efficiency in food production. The unit can apply to all sectors of food production including general food production, meat and seafood industries. The unit does not cover the design of equipment or undertaking engineering related analyses of mechanical, electrical, electronic or fluid power systems. However it includes using knowledge of food science and processes to determine the required food safety, quality and performance required from food production equipment. Depending on the workplace application, liaison may be required with engineering and maintenance specialists.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

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 the basic concepts of production processes	1.1 Processes used in the food production are identified 1.2 The characteristics used to define the operation of a process are established 1.3 The operating principles of the processes are identified 1.4 The operating standards, capabilities and maintenance requirements for equipment and accessories used in the specified production process are established 1.5 Product characteristics and common variations are recognised
2. Select the control mechanisms, modes of control and data collection points for a specified food production process	2.1 The operation of different types of control mechanisms is identified. 2.2 Modes of control, which can be used with the various control mechanisms, are identified 2.3 Data requirements and collection points appropriate for food safety, quality and production standards are documented 2.4 Procedures to deal with non-conformance in relation to process and the final product are developed
3. Implement process control systems appropriate for food process	3.1 Process control requirements for food process are communicated to appropriate operational, quality and maintenance personnel 3.2 Standard operational procedures are checked for accuracy and relevance 3.3 Test runs are conducted and checked against requirements 3.4 Statistical analysis is applied to verify the process and recommend and recommend any further system improvements 3.5 The on going collection and analysis of required data is arranged

Required Skills and Knowledge

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

Required skills include:

Ability to:

- identify the basic operating principles of equipment and accessories used in food production systems
- identify different types of processes used in food production systems
- use process control terminology
- identify the basic principles of operation of equipment and accessories used in a typical food production process
- recognise the process control methods used to achieve the food safety, quality and production standards
- develop procedures to deal with non-conformance in relation to process and the final product
- identify the operation of different types of process control mechanisms
- identify typical instrumentation for process control
- monitor data collection to ensure it is timely, relevant and accurate
- calculate relevant statistical measures
- apply statistical information to the analysis and verification of a process
- conduct a trend analysis of food processing data
- explain the verification process using statistical data
- prepare and use process control graphs
- use and explain relevant statistical measures
- prepare a report on the outcomes and recommendations/actions of the statistical analysis of process control data.

Required knowledge includes:

Knowledge of:

- the inter-relationships between food processing stages and the effect of variation in processing parameters on process outcome and on final product
- specific plant process operations
- emergency shutdown procedures
- instrumentation and control systems
- product specifications and tolerances
- systems operating parameters
- process control monitoring
- collection and recording of data
- statistical analysis of process control data
- reporting on conclusions from statistics-based process control monitoring and review.

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	A person who demonstrates competency in this unit must be able to recognise and implement the process control system for a food processing operation in order to achieve required food product specification.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Competency must be demonstrated in the ability to monitor process control systems in a typical production process, collect and analyse process control data and recommend system improvements, and develop procedures to deal with non-conformance in relation to process and the final product.
Context of and specific resources for assessment	Assessment of performance requirements in this unit should be undertaken within the context of food technology. Competency is demonstrated by performance of all stated criteria, including the critical aspects and knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statements applicable to the workplace environment. Assessment must occur in a real or simulated workplace where the assessee has access to: • Production process and related equipment, manufacturers' advice and operating procedures • Methods and related software systems as required for collecting data and calculating yields, efficiencies and material variances appropriate to production environment • Tests used to report relevant product/process information and recorded results.
Method of assessment	The following assessment methods are suggested: • Field reports • Written and/or oral questioning to assess knowledge and understanding • Completing workplace documentation • Third party reports from experienced practitioner • Case studies.
Guidance information for assessment	Assessment of performance requirements in this unit should be undertaken within the context of food

	technology. Competency is demonstrated by performance of all stated criteria, including the critical aspects and knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statements applicable to the workplace environment.
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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.

Occupational health and safety requirements	- Codes of practice, regulations, safety data sheets (SDSs) - Enterprise and process specific occupational health and safety requirements.
Regulations	Includes Australian and international Acts, regulations and standards where export of food products is undertaken. Legislative requirements are typically reflected in procedures and specifications. Legislation relevant to this industry includes the Food Standards Code including labelling, weights and measures legislation and legislation and regulations covering food safety, environmental management, occupational health and safety, anti-discrimination and equal opportunity.
Materials, equipment and systems	Typical processing and related techniques include but are not limited to raw materials/ingredient dispensing, preparation, mixing and blending, conditioning, primary and further processing, wrapping, packing and storage. Typical process parameters include but are not limited to temperature, time, pressure, flow rate etc.
Operating standards, capabilities and maintenance requirements for equipment and accessories	For this unit operating standards, capabilities and maintenance requirements for equipment and accessories are the equipment features that impact on the design of a food production process and the setting of production requirements. Examples could be: required down time for maintenance

	• holding capacity of bins, vessels, ovens etc • equipment in place cleaning programs and procedures • maximum and minimum conveyor speeds • oven temperature range • location of guards, access ports, loading and unloading doors, hatches etc.
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Unit Sector(s)

Technical.