

# CERTIFICATION STUDY GUIDE

## Fish & Seafood Primary Processor Crustaceans



# FOOD PROCESSING SKILLS CANADA CONTACT INFORMATION



**FPSC is here to help!**

**This Study Guide covers all the information on the  
Canadian Certified Fish & Seafood Primary  
Processor - Crustaceans (CCFSP) Certification.  
If you have questions after reviewing the Study Guide  
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## TABLE OF CONTENTS

Introduction.....	4
1. What is the CCFSP Certification?.....	5
2. Why become CCFSP Certified?.....	6
3. How to become CCFSP Certified?.....	7
4. Competencies Objectives.....	8
Logistics .....	8
Quality Management .....	10
Crustacean Processing .....	11
Lobster .....	11
Crab .....	23
Shrimp .....	27
Food Processing .....	30
Equipment and Tools .....	38
Sanitation .....	49
Food Packaging .....	53
Food Production Management .....	64
Food Safety Management .....	65
Food Traceability .....	66
Recalls .....	67
Pest Control .....	69
Waste Management .....	70
Health and Safety .....	71
Record Management .....	75
Organizational Policies and Procedures .....	76
Leadership .....	77
Communications .....	83
5. Glossary .....	85

## INTRODUCTION

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Food Processing is Canada’s third largest industry, employing more than half a million people. The sector is extremely diverse, consisting of more than 5,545 firms representing various sizes, structures and sub-sectors that produce over \$50 billion in annual sales. The various sub-industries of the broader food processing sector include: Animal Food Production, Grain and Oilseed, Sugar and Confectionary, Fruit and Vegetable, Dairy, Meat and Poultry, Fish and Seafood, Bakery, Beverage, Cannabis, and Other.

The CCFSP: Crustaceans Certification identifies and recognizes individuals who meet a specified standard defining competence in the meat field. A certified worker, on average, is more competent than a non-certified worker. The program is anchored in National Occupations Standards (NOS) developed by industry stakeholders. Along with information on essential skills and data derived from labour market information, the NOS defines the scope of each professional domain in sufficient detail to form the basis for assessment instrument development. Standards include knowledge and performance criteria as defined and validated by the industry. They are established at an expert rather than a job-entry level. Without these standards, no certification program could be built.

This study guide was written to provide you with the knowledge you need to pass the Canadian Certified Fish and Seafood Primary Processor (CCFSPP) Crustaceans Certification. The CCFSP Crustacean Certification gives employers a benchmark for evaluating their employee’s knowledge and performance. When an applicant for a job says, “I’m Fish and Seafood Primary Processing Certified”, the employer can be assured that the applicants knows the fundamental CCFSP concepts. For example, a CCFSP: Crustaceans worker should know the proper PPE to wear during their shift.



**DON'T** just study the questions and answers—the questions on the actual exam will be different from the practice ones included in this book and the online practice exam. The exam is designed to test your knowledge of a concept or objective, so use this book to learn the objective behind the question.

# 1. WHAT IS THE FISH AND SEAFOOD PRIMARY PROCESSOR: CRUSTACEANS CERTIFICATION?

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Certification has found its way into almost every industry for a reason; it helps advance the profession. Certification helps employers evaluate potential new hires, analyze job performance, evaluate employees, select contractors, market services, and motivate employees to enhance their skills and knowledge. Certification gives recognition of competency, shows commitment to the profession, and helps with job advancement. There has been an explosive growth in professional certification.

The CCFSP: Crustaceans certification was developed by Food Processing Skills Canada (FPSC) to provide an industry-wide means of certifying the competencies of Fish and Seafood Primary Processors. Candidates seeking certification as a Fish and Seafood Primary Processor: Crustaceans must successfully challenge an applied knowledge multiple-choice examination and a performance evaluation/assessment.

This CCFSP: Crustaceans exam is the first step of a two-step certification process for crustacean processing professionals. To qualify to write this exam, individuals must register by providing proof of employment of a minimum of 2 weeks/80 hours minimum work experience in the specialization, including blanching. For Cooking 4 weeks/160 hours work experience in this specialization.

## 2. WHY BECOME CCFSP CRUSTACEANS CERTIFIED?

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Today, it is increasingly difficult to get a job suited to your knowledge and skills. There are certain criteria that are valued more by employers than by others. Having a certificate from an organization means that you have attended the appropriate course through the approved training partners.

Food Processing Skills Canada and its FoodCert<sup>™</sup> program provides the opportunity for prospective employers in the Food and Beverage industry to verify a worker's competencies through the FoodCert<sup>™</sup> Passport, which is distributed to candidates after successful completion of any given certification. This brings trust and credibility to your resume and can help you get one step closer to your dream job in the industry.

- **Certification helps you get hired and allows you to grow within the company:**

Employers looking to hire want you to have knowledge, experience and certifications in your areas of expertise.

- **Provide an incentive for learning and progression:**

Certifications don't just separate job candidates starting out; they also demonstrate that you're committed to your profession and are willing to invest in your future. That's why employers are more likely to invest in you if you hold a certification.

- **Certification grows your skills:**

One of the most important reasons to get certified is that it helps you stay ahead of the competition. If you truly want to succeed in your career, you need to stay current in all the technologies and regulations that affect your profession. Always keep learning and you'll have a knowledge base that will make you an asset to your employer far into the future.

### 3. HOW TO BECOME CCFSPP CERTIFIED?

#### 1.1 The Process to your Canadian Certified Fish and Seafood Primary Processor: Crustaceans Certification

After obtaining the minimum amount of practical experience (2 weeks/80 hours minimum work experience in the specialization, including blanching and for Cooking 4 weeks/160 hours work experience in this specialization), earning the prestigious Canadian Certified Fish & Seafood Primary Processor (CCFSPP) Crustaceans involves two steps:

**1. Successful completion of the online exam to test knowledge.**

**2. Successful completion of the performance assessment/evaluation**

This will be conducted by a trained in-house evaluator using a smartphone, tablet or digital camera (e.g. Go Pro) technology to record the candidates carrying out the tasks. This Performance Assessment/Evaluation will be conducted after candidates have successfully completed the knowledge assessment.

#### THE PROCESS

ONLINE EXAM + PERFORMANCE EVALUATION = CERTIFICATION



The second step to the two-step certification process involves the provisioning and review of a Performance Evaluation on the use of skills and practices required for the work involved in the fish and seafood processing environment. The organization evaluating participants is asked to record, survey, and evaluate the different fish and seafood processing practices on video in a live setting, then provide the content to FPSC via document upload for our review and auditing before completing the certification process.

## 4. COMPETENCIES OBJECTIVES

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### Logistics

#### Handle Inventory

##### Receive live fish and seafood

#### Purpose of the Task

Receiving live fish and seafood at the facility is critical for ensuring that the product received and processed is authentic, safe and of the required quality. Grading that occurs in live holding during the receiving process is linked to regulatory requirements for processing. Product is graded based on viability - i.e., alive, weak or dead, and are sorted and separated accordingly. Regulations prohibit dead fish and seafood being used in any processing activities. Grading in the live holding environment has an impact on processing activities to follow. Fish and seafood must be effectively separated to ensure that the product being received by the processing line is of the correct quality, quantity for its intended purpose.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Confirm appropriate transportation and handling of product, for example:
  - ✓ confirm transportation timeline expectations, e.g. when the shipment will be received
  - ✓ confirm containers used for transport
  - ✓ confirm carrier and their responsibilities for the product
- Review product identification on the shipment to verify, for example:
  - ✓ product has been harvested from a safe and approved harvesting area:
    - if harvesting area is contaminated by chemical or pathogens, reject order
    - if product is from new harvesting area, confirm safety of area prior to accepting order
  - ✓ supplier is approved, e.g. check Approved Suppliers list, if applicable
  - ✓ proper traceability guidelines have been followed with proper communication from harvester to processing facility
- Inspect condition of fish and seafood within shipment, for example:
  - ✓ verify holding time and temperature of product
- Grade product:
  - ✓ identify live, weak or dead crustaceans
  - ✓ segregate product based on grade
  - ✓ manage or dispose of dead product according to regulatory and/or company policies and procedures
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of dead product increases



- Follow traceability guidelines following receipt of live fish and seafood, for example:
  - ✓ assign product lot numbers
  - ✓ follow required documentation procedures:
- Segregate identified lots of fish and seafood to prevent cross-contamination
  - ✓ ensure proper live holding/storage of fish and seafood awaiting processing
- Transfer each category of fish and seafood to its next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of receiving stage on next processing stages
- Importance of meeting task completion timelines
- Importance of controlling holding time and temperature
- Receiving procedures
- Live grading standards
- Traceability requirements

## Variables, Range of Context

- Size of operation, e.g. amount of product being processed
- Type of fish and seafood being received
- Regulatory guidelines for grading in live holding

## Glossary

**Grading** - involves the inspection, assessment and sorting of various foods regarding quality, freshness, legal conformity and market value. Food grading often occurs by hand, in which foods are assessed and sorted. Machinery is also used to grade foods and may involve sorting products by size, shape and quality.

## Quality Management

### Monitor Product Quality

### Grade/Inspect fish and seafood

#### Purpose of the Task

To provide a consistent product in terms of quantity, size, weight or quality. Improperly graded fish and seafood can result in product that does not meet quality specification, which could result in returned product, customer complaints or consumer health and safety issues. Grading occurs throughout various stages of processing.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Control holding time and temperature of fish and seafood during grading
- Manually, or use equipment, to grade fish and seafood using specified criteria:
  - ✓ compare fish and seafood to quality standards, e.g. size, weight, colour
  - ✓ place in designated containers according to grade
  - ✓ remove fish and seafood that do not meet specifications for reuse or disposal
- Notify appropriate personnel (e.g. supervisor, quality control) if frequency of fish and seafood that do not meet specifications increases
- Weigh each container of graded fish and seafood, if applicable:
  - ✓ record bin weights on grading forms
- Transfer each category of fish and seafood to its next stage

#### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of controlling holding time and temperature
- Fish and seafood quality standards
- Grading standards

## Variables, Range of Context

- Size of operation, e.g. amount of fish and seafood being processed
- Methods of grading used, e.g. manual or automated
- Species of fish and seafood being graded

## Glossary

**Grading** - involves the inspection, assessment and sorting of various foods regarding quality, freshness, legal conformity and market value. Food grading often occurs by hand, in which foods are assessed and sorted. Machinery is also used to grade foods and may involve sorting products by size, shape and quality.

## Crustacean Processing: Lobster

### Clean whole lobster

#### Purpose of the Task

Whole lobsters are cleaned to remove excess hemolymph that can accumulate on the shell following the cooking process. Cleaning can be done manually or using water and is completed for appearance.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Remove excess hemolymph from lobster shell, for example:
  - ✓ manually remove
  - ✓ remove hemolymph using water, e.g. from a hose
- Visually verify that excess hemolymph has been removed
- Transfer cleaned whole lobster to next stage

#### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines

## Variables, Range of Context

- Size of operation, e.g. number of crustaceans being processed
- Whole lobsters that are cooked in netted bags may have more excessive hemolymph that requires removal. Netting can make it somewhat more difficult to wash the hemolymph off, taking more time.

## Glossary

**Hemolymph** - The white congealed substance that appears when lobsters are cooked; hemolymph is the protein substance that lobsters have instead of blood and intestines.

## Net whole lobster

### Purpose of the Task

Whole lobsters are placed in net bags either prior to, or following cooking, to keep them separated in a master package and to prevent breakage of claws and legs.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Place individual lobsters in netted bags, for example:
  - ✓ manually insert live, banded lobster or cooked whole lobster into netted bags
  - ✓ individual insert whole lobster into netting machine
- Visually verify that whole lobster has been netted and tied
- Transfer netted whole lobster to next stage

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines

## Variables, Range of Context

- Size of operation, e.g. number of crustaceans being processed
- Whole lobsters can be netted before or after cooking. If whole lobsters are netted before cooking, workers must be mindful of handling a live product.

## Prepare brined whole lobster

### Purpose of the Task

Whole cooked lobsters may be individually sealed in a brine solution based on customer specifications. Brining whole lobsters required sealing and packaging skills. Within the industry, brined whole lobsters are often referred to a 'popsicle pack.'

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain whole, cooked lobsters from designated bins
- Prepare brine solution, if required:
  - ✓ fill tub with approved water to prescribed level
  - ✓ add premeasured salt to achieve percentage of salinity
  - ✓ check percentage of salt using salinometer:
    - verify calibration of salinometer, if required
- Individually bag whole cooked lobster, i.e. manually or using an automated bagging machine
- Add required amount of brine to each lobster bag
- Seal bags of brined lobster using sealing machine
- Hang sealed bags on aluminum racks
- Transfer racks of sealed bags to next stage, e.g. blast-freezing

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Packaging techniques
- Sealing techniques

- Procedures for preparing brine solution
- Proper use of salinometer

### **Variables, Range of Context**

- Size of operation, e.g. number of crustaceans being processed
- Automation, e.g. manual or automatic bagging

## **Remove raw lobster tails**

### **Purpose of the Task**

To efficiently remove the tails from raw lobster to maximize the yield of protein, while ensuring quality and personal safety (e.g. no personal injury from sharp knives, meat extraction tools or broken shells).

### **Performance**

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Remove live lobsters from holding tanks
- Stun lobsters, if required
- Remove raw lobster tails:
  - ✓ insert tail of lobster into extractor/shoe horn to separate from body
  - ✓ place tail in designated bin or belt for cleaning
  - ✓ place remaining lobster in designated bin for further processing (e.g. cooking, cleaning)
- Transfer raw lobster tails to next stage

### **Knowledge**

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Crustacean quality standards

### **Variables, Range of Context**

- Size of lobsters being processed

- Size of operation, e.g. number of lobsters being processed
- Level of automation

## Clean raw lobster tails

### Purpose of the Task

To effectively clean the tails of raw lobster to ensure product quality and customer satisfaction. Raw lobster tails that are not cleaned properly may be returned by customers.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain raw lobster tails from designated bins
- Remove vein and roe from lobster tail, for example:
  - ✓ insert tip of suction line into tail to remove vein and roe
  - ✓ remove vein and roe with fingers
- Remove cartilage from outer shell of lobster tail
- Place lobster tails in designated pans by size
- Place pans in tub of water for final cleaning to remove any excess roe or vein
- Remove pans from water and place on table or belt to drain
- Weigh lobster tails and separate into portions, e.g. 10 pound pans
- Transfer to next stage

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Lobster anatomy

### Variables, Range of Context

- Size of lobsters being processed
- Size of operation, e.g. number of lobsters being processed
- Level of automation

## Glossary

**Roe** - Unfertilized eggs found within the body cavity and tail of a female lobster.

### Process In-Shell Lobster Segments

#### Separate/Split lobster into segments

#### Clean in-shell lobster segments

### Separate/Split lobster into segments

#### Purpose of the Task

To separate the base components of the cooked or raw lobster into splits or sections based on quality standards and customer specifications. Proper separating or splitting maximizes yield. If this step is not completed correctly, waste increases and yield decreases, which is costly for the company.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain lobster from designated bins
- Separate lobster into sections (in-shell):
  - ✓ remove tail from lobster, for example:
    - twist tail to remove from thorax (i.e. body) of the lobster
  - ✓ remove claws and knuckles from lobster, for example:
    - twist claw and knuckle from thorax
  - ✓ remove legs from lobster, for example:
    - pull or cut legs from body using scissors
    - insert legs into rolling machine to extract meat
  - ✓ remove head of lobster, for example:
    - pull up head of lobster to remove from body
    - shake body to separate tomalley/roe from white body and gills
    - transfer tomalley/roe for further processing or discard
    - discard carapace shell and gills
- Split lobster in half, for example:
  - ✓ position lobster on belt of band saw
  - ✓ feed lobster one at a time through saw
  - ✓ monitor that lobsters are being cleanly separated:
    - notify supervisor if band saw is malfunctioning or damaging product
  - ✓ lay left and right sections of each lobster side by side on a tray



- ✓ clean split sections, by removing roe and vein, if required by customer
- Transfer lobster segments and/or splits to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Lobster anatomy
- Customer specifications

## Variables, Range of Context

- Size of lobsters being processed
- Size of operation, e.g. number of lobsters being processed
- Equipment being used to separate lobster components
- Customer specifications will dictate how the lobster is separated and in which combinations, e.g. knuckles only, knuckles and claws, bodies with legs, bodies without legs, etc.

## Glossary

**Thorax** - Part of the lobster anatomy located between the head and the tail. Together, the head and the thorax of the lobster (i.e. the cephalothorax) are often referred to as the 'body' of the lobster.

## Clean in-shell lobster segments

### Purpose of the Task

In-shell lobster segments are cleaned to remove excess hemolymph that can accumulate on the shell following the cooking process. Cleaning can be done manually or using water and is completed for appearance.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Remove excess hemolymph from shell, for example:

- ✓ manually remove
- ✓ remove hemolymph using water, e.g. from a hose
- Visually verify that excess hemolymph has been removed
- Transfer cleaned in-shell lobster segments to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines

## Variables, Range of Context

- Size of operation, e.g. number of crustaceans being processed

## Glossary

**Hemolymph** - The white congealed substance that appears when lobsters are cooked; hemolymph is the protein substance that lobsters have instead of blood and intestines.

## Process Lobster Meat

### Pick/Shuck lobster meat

#### Purpose of the Task

To efficiently remove the meat from in-shell lobster segments of cooked lobsters to maximize yield of meat protein, while ensuring quality (e.g. no shell) and personal safety (e.g. no personal injury from sharp knives, meat extraction tools or broken shells).

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain clean, in-shell lobster segments from designated bins
- Crack lobster claws:
  - ✓ hold claw in one hand
  - ✓ strike top of claw with hacking/chopping knife with dominant hand to separate claw from knuckle

- ✓ place knuckles and claws in separate pans for shelling and meat removal
- Remove claw meat:
  - ✓ hold claw in one hand
  - ✓ remove meat with dominant hand using a knuckle pick
  - ✓ use claw cleaner to remove cartilage from claw
  - ✓ place claw meat in designated pan
- Remove tail meat:
  - ✓ split tail shell
  - ✓ remove tail from shell using tail pick
  - ✓ split tails to remove vein
- Remove knuckle and thumb meat:
  - ✓ hold knuckle or thumb in one hand
  - ✓ remove meat with dominant hand using a knuckle or thumb pick
  - ✓ place knuckle and/or thumb meat in designated pan for meat cleaning
- Transfer meat to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Lobster anatomy
- Lobster picking and shucking techniques

## Variables, Range of Context

- Size of lobsters being processed
- Size of operation, e.g. number of lobsters being processed

## Clean lobster meat

### Purpose of the Task

To efficiently clean lobster meat to ensure the product contains no shell or cartilage so that it can be weighed and packaged for consumer use. Lobster meat that is not properly cleaned will not meet quality standards and could result in product returns and customer complaints.

## Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain lobster meat from designated pans
- Clean lobster claws:
  - ✓ hold claw in one hand
  - ✓ rinse or dampen claw with small amount of water
  - ✓ rub or scrape excess protein off claw with small knife
  - ✓ check for missed cartilage; remove if required
  - ✓ place cleaned claws in designated pan for draining, if applicable
- Clean knuckle and broken meat:
  - ✓ spread small portion of meat on cleaned and sanitized work station table or board
  - ✓ visually scan and feel the meat with gloved hands for shells and cartilage
  - ✓ remove shells or cartilage, if required
  - ✓ place cleaned meat in designated pan for draining
- Drain cleaned lobster meat for time outlined in Standard Operating Procedures (SOPs)
- Transfer cleaned and drained lobster meat to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMPs)
- Process flow, for example:
  - ✓ impacts of preceding stage on current process stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Quality standards

## Variables, Range of Context

- Number of claws to be cleaned
- Size of operation, e.g. amounts being processed
- Level of automation

## Brine cooked lobster meat

### Purpose of the Task

To weigh, portion, brine and bag cooked lobster meat according to customer specifications. Attention to detail is important to ensure the correct percentage of claw meat to mince meat, salinity, and weight. Incorrectly performing this task can result in customer complaints and product returns.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Weigh and portion lobster meat
- Prepare brine:
  - ✓ fill tub with approved water to prescribed level
  - ✓ add premeasured salt to achieve percentage of salinity
  - ✓ check percentage of salt using salinometer:
    - verify calibration of salinometer, if required
- Brine portions of loose meat and tails:
  - ✓ place portions on a strainer
  - ✓ lower strainer of lobster meat into brining tub
  - ✓ allow meat to brine for time specified in SOPs
  - ✓ drain brined meat
  - ✓ weigh brined meat
  - ✓ portion and package brined meat
  - ✓ place packaged brined meat in designated pans for sealing, if required
- Brine bagged lobster meat:
  - ✓ place weighed portions of lobster meat into plastic bags
  - ✓ add required amount of brine to each bag
  - ✓ place brined bags in designated pans for sealing, if required
- Seal bags:
  - ✓ insert bags into sealing machine:
    - Monitor process to ensure bags are sealed
  - ✓ place sealed bags in tray for freezing
- Transfer bagged and brined lobster meat to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Sealing techniques
- Proper use of salinometer
- Specifications for preparing brine

## Variables, Range of Context

- Size of operation, e.g. amount of lobster being processed
- Equipment configuration

## Glossary

**Brine** - to soak or saturate a product, like lobster meat, with salty water.

**Salinometer** - A device designated to measure the salinity, or dissolved salt content, of a solution. Also known as a 'brine tester.'

## Prepare lobster mince

### Purpose of the Task

To cook and process lobster bodies and by-products to create a lobster mince that meets quality standards and customer specifications. Improper preparation of the mince at any stage, including cooking, mincing or packaging, could result in quality issues – like shells in the mince, or health concerns due to cross-contamination or spoilage.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain lobster bodies from designated bin:
  - ✓ visually inspect that gills and carapace shell have been removed
- Load lobster bodies onto hopper

- Feed lobster bodies into grinding machine (e.g. bader) to separate meat from white body
- Monitor grinding process:
  - ✓ set machine according to SOPs
  - ✓ inspect outcoming mince to verify quality standards
- Transfer lobster mince to next stage, e.g. portioning/weighing, packaging

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Sealing techniques
- Proper use of grinding machine (e.g. bader)

### Variables, Range of Context

- Size of operation, e.g. amount of lobster being processed

## Crustacean Processing: Crab

### Butcher crab

#### Purpose of the Task

Proper butchering of crab ensures maximum yield. Improper butchering can cause cross-contamination, waste of crab meat and personal injury. Both raw and cooked crabs may be butchered. Butchering can occur manually or using mechanical equipment that both butchers and cleans the crab.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain crabs from designated areas, for example:
  - ✓ remove live crabs from holding tanks:
    - stun crabs, if applicable
  - ✓ obtain cooked crabs from cooking line
- Wash crabs, e.g. on moving wash tank or with a sprayer

- Butcher crab:
  - ✓ manually butcher crab, for example:
    - remove cap/top of crab using equipment or manually
    - remove mandibles and gut
    - remove gills from shoulders using mechanical brushes
    - dispose of cap, gills and gut
  - ✓ mechanically butcher crab, for example:
    - load crabs into automated equipment
    - monitor process to ensure proper butchering
    - verify quality of crab sections
- Transfer crab sections, i.e. left and right arm sections, to next stage

### **Knowledge**

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Characteristics of end product
- Quality standards for crab, e.g. colour, appearance
- Safety hazards, e.g. butchering tools; crab claws and shells

### **Variables, Range of Context**

- Size of operation, e.g. amount of lobster being processed
- Types of crab being butchered, e.g. Jonah crab, snow crab, rock crab
- Size of operation, e.g. amounts being butchered
- Level of automation
- Types of butchering equipment, e.g. spikes
- Different capacities, sizes and configurations of equipment



## Prepare crab meat

### Purpose of the Task

To prepare crab meat that is free of shells and other foreign debris and is of a pleasing consistency. Crab meat that does not meet quality standards could result in product returns, customer complaints and loss of money for the company.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain cooked crab sections from designated bins/line
- Feed crab sections into automated crusher/grinder to extract meat from shells:
  - ✓ set machine according to SOPs
- Monitor process:
  - ✓ compare in-process product to quality standards
  - ✓ discard in-process product that does not meet specifications
  - ✓ take corrective action, if applicable
- Wash crab meat extracted by the automated crusher/grinder
- Visually inspect meat for broken shells or other foreign objects:
  - ✓ remove any foreign objects, if applicable
  - ✓ inform supervisor if excessive amounts of foreign objects or shells are found
- Transfer washed and inspected crab meat to pressing machine to remove excess moisture
- Transfer crab meat to next stage, e.g. packing

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Meat extraction processes

### Variables, Range of Context

- Types of crab being processed, e.g. Jonah crab, snow crab, rock crab
- Size of operation, e.g. amounts being processed

## Prepare crab mince

### Purpose of the Task

To prepare a crab mince that meets quality standards and customer specifications. Improper preparation of the mince at any stage, including cooking, grinding or packaging, could result in quality issues – like shells in the mince, or health concerns due to cross-contamination or spoilage.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain crab bodies from processing line
- Load cooked crab onto hopper
- Feed cooked crab into grinding machine to separate meat from shell
- Monitor grinding process:
  - ✓ set machine according to SOPs
  - ✓ inspect outcoming mince to verify quality standards
- Transfer crab mince to next stage, e.g. portioning/weighing, packaging, freezing

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Food safety standards, e.g. cross contamination risks, allergen and segregation procedures
- Reporting protocols

### Variables, Range of Context

- Types of crab being processed, e.g. Jonah crab, snow crab, rock crab
- Size of operation, e.g. amounts being processed
- Level of automation

## Crustacean Processing : Process Shrimp

### Prepare shrimp for primary processing

#### Purpose of the Task

Preparing shrimp is a critical step prior to cooking and peeling shrimp. If this stage is not completed effectively, the shrimp will not peel properly leading to issues with shell and quality.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Receive bagged shrimp from wharf or cold storage
- Tip or lift containers of bagged shrimp onto workstation or conveyor using forklift
- Open bags of shrimp and dump shrimp onto hopper for washing and grading:
  - ✓ remove any visible foreign material or other species
- Wash shrimp via water conveyor or sprayer of fresh water
- Convey washed shrimp to automatic weigh scales
- Convey weighed shrimp into tubs
- Prepare maturing solution:
  - ✓ confirm correct ratio of maturing solution(s) to water
  - ✓ mix maturing solution manually or using an automated mixer
  - ✓ verify amount of solution required for size of tub and amount of shrimp
- Add maturing solution to tubs of shrimp
- Tag tubs with traceability information, including batch code, time and date, etc.
- Move tubs to designated area for holding using forklift:
  - ✓ store tubs using First In, First Out (FIFO) Method

#### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of traceability
- Characteristics of end product
- Food safety standards, e.g. bacterial/microbial growth, spoilage
- Safety hazards, e.g. forklift operation

## Variables, Range of Context

- Type of raw material, e.g. fresh versus frozen shrimp
- Size of operation, e.g. amounts being processed
- Level of automation
- Different capacities, sizes and configurations of equipment

## Glossary

**FIFO (First In, First Out)** - A FIFO warehouse system is an inventory management system in which the first or oldest stock is used first and the stock or inventory that has most recently been produced or received is only used or shipped out until all inventory in the warehouse or store before it has been used or shipped out.

## Cook and peel shrimp using automated equipment

### Purpose of the Task

Cooking and peeling shrimp is important for transforming the raw, shell-on shrimp to a cooked product. Improper cooking can have a negative impact on product quality, but also result in food-borne illness, such as food poisoning, when consumed.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Prepare automated shrimp cooker and peeler:
  - ✓ program automated cook/peel machine for appropriate temperature and time
- Load raw shrimp into automated cook/peel machine
- Monitor process:
  - ✓ monitor cooking temperature during process:
    - identify deviations
    - seek approval to adjust settings, as necessary
  - ✓ check to ensure that shells are being removed
  - ✓ compare cooked and peeled shrimp to quality standards, e.g. size/dimensions, weight, colour, texture
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of shrimp that does not meet specifications increases
  - ✓ take corrective action, if applicable:
    - document actions taken
- Transfer cooked and peeled shrimp, via automatic conveyor or water flow to automated inspection machine
- Monitor process:

- ✓ check that automated inspection machine is automatically rejecting shrimp with shells
- ✓ check that rejected shrimp are being sent to after-peeler machine and looping back into the flow:
  - identify deviations
  - seek approval to adjust settings, as necessary
- Transfer cooked and peeled shrimp via automatic conveyor or water flow to next stage, e.g. manual inspection

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMPs)
- Process flow, for example:
  - ✓ impacts of preceding stage on current process stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timeline
- Cooking equipment operating controls, parameters and capacity
- Specified cooking process and process requirements, i.e. time, temperature
- Importance of maintaining temperatures, e.g. cooling, cooking
- Characteristics of end product
- Quality standard for cooked shrimp, e.g. colour, texture, odour, consistency, flavour
- Indicators that cooked shrimp does not meet specifications, e.g. poor colour development or incorrect colour, abnormal changes to shape, inappropriate texture, lack of, or incorrect flavour
- Food safety standard, e.g. bacterial/microbial growth, spoilage
- Safety hazards, e.g. steam, hot surfaces, extremes of temperatures

## Variables, Range of Context

- Size of shrimp being processed
- Size of operation, e.g. amounts being processed
- Type of shrimp being processed, e.g. fresh vs. industrial
- Level of automation
- Different capacities, sizes and configurations of equipment

## Food Processing

### Prepare Raw Materials/In-process Products

#### Brine-freeze crustaceans

##### Purpose of the Task

To brine-freeze crustaceans to ensure product quality and customer satisfaction. Product that is not properly brine-frozen may not meet quality specifications related to colour, weight and consistency. Proper preparation of the brining solution is key for effective brine-freezing and final product quality.

##### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Prepare brine solution, if required:
  - ✓ fill tub with approved water to prescribed level
  - ✓ add premeasured salt to achieve percentage of salinity
  - ✓ verify salinometer is calibrated
  - ✓ use salinometer to verify percentage of salt
- Obtain cooked crustaceans from designated bins
- Load crustaceans onto trays/racks/pallets
- Place trays/racks/pallets of crustaceans into temperature-controlled cold water (e.g. 1-2°C) for designated time (e.g. 2-5 minutes)
- Transfer trays/racks/pallets of crustaceans into temperature-controlled brine solution (e.g. -18°C) for designated time (e.g. 30 minutes)
- Monitor freezing process:
  - ✓ monitor freezer temperature during process:
    - identify deviations
  - ✓ monitor brine strength using salinometer
  - ✓ seek approval to adjust temperature settings, as required
  - ✓ assess internal temperature of crustaceans, if required
  - ✓ conduct supervisor to adjust holding times of product, as required
  - ✓ compare brine-frozen crustaceans to quality standards, e.g. size/dimension, weight, colour, texture
- Remove trays/racks/pallets from brine solution
- Dip crustaceans to remove brine solution
- Glaze brine-frozen crustaceans, if required, for example:
  - ✓ spray or dip frozen crustaceans with fresh water
- Transfer glazed crustaceans to blast-freezer

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Proper use of refrigeration equipment
- Procedures for preparing brine solution
- Proper use of salinometer
- Impact of brine-freezing on whole crustaceans and segments
- Quality standards for frozen crustaceans, e.g. colour, texture, acceptable weight loss

## Variables, Range of Context

- Types of crustaceans being frozen
- Size of operation, e.g. number of crustaceans being processed
- Types of freezing equipment, e.g. plate freezers, blast freezers

## Glossary

**Glazing** - the application of a protective layer of ice formed at the surface of a frozen product by spraying it with, or dipping it into, clean seawater, potable water or potable water with approved additives.

## Freeze fish, crustaceans, and mollusks

### Purpose of the Task

To freeze fish, crustaceans and mollusks to ensure product quality and customer satisfaction. Product that is not properly frozen may not meet quality specifications related to colour, weight and consistency.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Place fish/crustaceans/mollusks on appropriate trays/racks/pallets
- Load trays/racks/pallets in freezer, e.g. blast freezer, plate freezer, IQF tunnel freezer
- Monitor freezing process:
  - ✓ monitor freezer temperature during process:
    - identify deviations

- seek approval to adjust temperature settings, as required
- ✓ assess internal temperature of fish/crustaceans/mollusks if required
- ✓ conduct supervisor to adjust holding times of product, as required
- ✓ compare frozen fish/crustaceans/mollusks to quality standards, e.g. size/dimension, weight, colour, texture
- ✓ redirect fish/crustaceans/mollusks that do not meet specifications, as directed
- ✓ notify appropriate personnel if frequency of frozen fish/crustaceans/mollusks that do not meet specifications increases
- Remove trays/racks/pallets from freezer
- Glaze frozen fish/crustaceans/mollusks, if required, for example:
  - ✓ spray or dip with fresh water
- Transfer glazed fish/crustaceans/mollusks back to freezer
- Refreeze glazed fish/crustaceans/mollusks
- Transfer refrozen fish/crustaceans/mollusks to next stage

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ impacts of current process stage on next stage
- Importance of meeting task completion timelines
- Importance of meeting yield requirements
- Proper use of refrigeration equipment
- Impact of freezing on fish/crustaceans/mollusks and segments
- Quality standards for frozen fish/crustaceans/mollusks, e.g. colour, texture, acceptable weight loss

### Variables, Range of Context

- Types of fish/crustaceans/mollusks being frozen
- Size of operation, e.g. number of fish/crustaceans/mollusks being processed
- Types of freezing equipment, e.g. plate freezers, blast freezers, IQF tunnel freezers

### Glossary

**Glazing** - The application of a protective layer of ice formed at the surface of a frozen product by spraying it with, or dipping it into, clean seawater, potable water or potable water with approved additives.



## Transform Raw Materials/ In-Process Products

### Cook crustaceans/mollusks

#### Purpose of the Task

To cook crustaceans/mollusks humanely to ensure that the product is safe for consumption. Improperly cooked crustaceans/mollusks can cause quality issues, such as poor taste and texture, as well as health and safety issues, if customers become sick from eating contaminated product. The cooking stage is a Critical Control Point within crustacean and mollusk processing.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain live crustaceans and mollusks from holding tanks:
  - ✓ ensure that received product is meeting required specification, e.g. temperature
- Load crustaceans and mollusks into cooker, e.g. continuous cooker or batch cooker
- Monitor cooking process:
  - ✓ monitor cooking temperature during process:
    - identify deviations
    - seek approval to adjust settings, as necessary
  - ✓ check that temperature of crustaceans/mollusks meets specifications:
    - verify internal temperature of cooked product according to organizational policies and procedures
  - ✓ seek approval to adjust cooker settings, as necessary
  - ✓ compare cooked crustaceans/mollusks to quality standards, e.g. size/dimensions, weight, colour, texture
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of crustaceans/mollusks with quality issues increase
- Remove cooked crustaceans/mollusks from cooker
- Transfer cooked crustaceans/mollusks to next stage

#### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Cooking equipment operating controls, parameters and capacities
- Specified cooking process and process requirements, i.e. cooking times, temperatures
- Quality standards for cooked crustaceans/mollusks, e.g. colour, texture, smell, consistency, flavour
- Indicators that cooked crustaceans/mollusks do not meet specifications, e.g. poor colour development or incorrect colour, abnormal changes to shape, inappropriate texture, lack of, or incorrect flavour

- Food safety risks, e.g. bacterial/microbial growth, spoilage
- Food safety standards, e.g. Critical Control Points
- Safety hazards, e.g. steam, hot surfaces, extremes of temperature

### Variables, Range of Context

- Types of crustaceans/mollusks being cooked
- Size of operation, e.g. amounts of product being processed
- Level of automation
- Types of cooking equipment, e.g. continuous cookers, batch cookers
- Different capacities, sizes and configurations of equipment
- Different cooking methods
- Within some facilities, two classifications of workers may be responsible for the cooking function. Cooker Operators often have the basic knowledge of how to operate the cooker and follow the SOPs associated with the cooking process. Master Cookers have additional skills and knowledge and are able to participate in the auditing process in compliance with regulatory requirements.

### Glossary

**Glazing** - The application of a protective layer of ice formed at the surface of a frozen product by spraying it with, or dipping it into, clean seawater, potable water or potable water with approved additives.

## Cool crustaceans/mollusks

### Purpose of the Task

Cooling crustaceans and mollusks is an important step within facilities that use batch cookers, rather than continuous cookers. While continuous cookers integrate the cooling process, facilities with batch cookers must ensure that workers are following the proper cooling process to maintain product quality and safe food handling.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Remove crustaceans/mollusks from the batch cooker
- Immediately transfer crustaceans/mollusks to water submersion cooler:
  - ✓ verify temperature of cooler water, e.g. 2°C
- Hold product within cooler for time specified with SOPs
- Check internal temperature of crustaceans/mollusks, e.g. using digital probe thermometer, infrared gun:
  - ✓ if internal temperature is under 10°C, remove from cooler
  - ✓ if internal temperature is over 10°C, keep in cooler
- Set cooled product on pallets
- Transfer cooled crustaceans/mollusks to next stage, e.g. chill room

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Cooling equipment operating controls, parameters and capacities
- Specified cooling process and process requirements, i.e. cooling times, temperatures

## Variables, Range of Context

- Types of crustaceans/mollusks being cooled
- Size of operation, e.g. amounts of product being processed

## Blanch crustaceans

### Purpose of the Task

To effectively blanch the product, such as lobster, crab or shrimp. If blanching is not completed correctly, the crustaceans will cook, changing the consistency, handling and packaging of the product.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protective equipment, e.g. hair net, beard net
- Obtain live crustaceans from holding tanks:
  - ensure that received product is meeting required specification, e.g. temperature
- Load crustaceans into cooker, e.g. batch cooker
- Monitor blanching process:
  - ✓ monitor temperature during process:
    - identify deviations
  - ✓ check that temperature of crustaceans meets specifications, e.g. customer requests:
    - verify internal temperature of blanched product according to organizational policies and procedures
  - ✓ seek approval to adjust cooker settings, as necessary
  - ✓ compare blanched crustaceans to quality standards, e.g. size/dimensions, weight, colour, texture
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of crustaceans with quality issues increase
- Remove blanched crustaceans from cooker and place in ice water for cooling:
  - ✓ Monitor cooling process:
    - monitor temperature and holding time

- Transfer blanched crustaceans to next stage

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impacts of preceding stage on current stage
  - ✓ effects of current process stage on next stage
- Importance of meeting task completion timelines
- Blanching equipment operating controls, parameters and capacities
- Specified blanching process and process requirements, i.e. cooking times, temperatures
- Quality standards for blanched crustaceans, e.g. colour, texture, smell, consistency, flavour
- Indicators that blanched crustaceans do not meet specifications, e.g. poor colour development or incorrect colour, abnormal changes to shape, inappropriate texture, lack of, or incorrect flavour
- Food safety risks, e.g. bacterial/microbial growth, spoilage
- Safety hazards, e.g. steam, hot surfaces, extremes of temperature

## Variables, Range of Context

- Types of crustaceans being blanched
- Size of operation, e.g. amounts of product being processed
- Level of automation
- Types of cooking equipment, e.g. batch cookers
- Different capacities, sizes and configurations of equipment

## Glossary

**Blanching** - process where a product, like lobster, is scalded in boiling water, removed after a brief, timed interval and the transferred into iced water to halt the process. Crustaceans are not considered cooked after blanching.

## Retort food products

### Purpose of the Task

Retorting food products ensures a safe finished food product that meets specifications. The process also extends the product's shelf life.

### Performance

- Use appropriate PPE, e.g. gloves, apron, safety footwear, safety glasses, bump caps/hard hats
- Use appropriate food handling protection equipment, e.g. hairnet, beard net, balaclava
- Set up cans to feed into equipment:
  - ✓ monitor cleanliness of containers before filling
- Ensure equipment is ready to begin processing:
  - ✓ ensure equipment is clean, clear and undamaged before operating

- ✓ ensure components are ready for operation, e.g. valves and drains are unobstructed
- ✓ ensure work area is clean and safe for production
- ✓ set controls to specifications, e.g. type/size of container, if required
- Load cans into equipment, e.g. when equipment light indicates readiness
- Begin the retort process, for example:
  - ✓ close doors on equipment
  - ✓ press start controls
  - ✓ Indicate to co-worker/operator process can begin
- Monitor process:
  - ✓ monitor supply level and flow of product into containers
  - ✓ monitor time
  - ✓ monitor temperature
  - ✓ monitor cap/lid alignment or induction seal application
  - ✓ monitor sealing of container
  - ✓ monitor cooling time
- Remove product from equipment:
  - ✓ ensure safe work practices are followed, e.g. protection from high temperatures/steam
- Compare product to quality standards:
  - ✓ discard in-process product that does not meet specifications or recycle for reuse
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of product that does meet specifications increases
  - ✓ take corrective action, if applicable
  - ✓ document actions taken
- Document process, as required, e.g. temperatures, time of vent closing
- Transfer retorted products to next stage, e.g. belt, conveyer, slide

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Equipment operating controls, parameters, and capacity
- Ingredient/product characteristics,
- Ingredient/product requirements, e.g. product temperature
- Different product container types, volumes, and codes
- Different product coding requirement, e.g. date/time stamp
- Process flow, for example:
  - ✓ impacts of preceding stage on current process stage
  - ✓ effects of current process stage on next stage
- Equipment operating controls, parameters and capacity, e.g. speed, volume of product for different size containers, emergency shutdown procedures

## Variables, Range of Context

- Types of products that can be retorted

- Different capacities, speeds, sizes and configurations of equipment
- Size of operation, e.g. numbers of containers being filled, number of lines being run
- Level of automation
- Equipment configuration, e.g. cleaning, filling, labelling
- Types and shapes of containers

## Equipment and Tools

### Operate Food Processing Equipment

#### Conduct pre-operation check on food processing equipment

##### Purpose of the Task

Before even starting the equipment, it is important to ensure that the equipment is ready to be energized in order to prevent damage. This can prevent problems occurring when the equipment is operating and ensure the equipment is safe and sanitary for operation.

##### Performance

- Use required PPE, e.g. safety glasses, safety footwear, mesh gloves
- Check that equipment safety controls are in place and working properly
- Conduct pre-operation check using checklist, if applicable
- Check operational functions, for example:
  - ✓ control valves are working properly
  - ✓ level probes are operational
  - ✓ oil levels
  - ✓ sharpness of cutting instruments
  - ✓ guards are in place
- Identify component wear on equipment
- Carry out preventative maintenance, if applicable, e.g. replace gasket or worn parts
- Verify that equipment is properly calibrated, if applicable
- Ensure appropriate personnel (e.g. supervisor, quality assurance) approve equipment start up, if applicable, e.g. swab test has been completed
- Document pre-operation check, if applicable

##### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety practices
- Operation of equipment component functions and safety controls
- Pre-operation checklists
- Indicators of equipment wear
- Indicators of operational malfunctions, e.g. stuck valves, low oil levels

## Variables, Range of Context

- Types of equipment
- Level of automation and instrumentation
- Equipment hazards and guards/safety controls
- Requirements for documentation, e.g. checklists

## Start up food processing equipment

### Purpose of the Task

It is important to ensure that when the equipment is energized, it is operating correctly. This prevents damage to the equipment, ensures the efficiency of the organization and ensures employee safety.

### Performance

- Use required PPE, e.g. safety glasses, safety footwear
- Set up equipment for operation:
  - ✓ set specific equipment and process controls, for example:
    - size
    - speed
    - temperature
    - time
    - weight
    - volume
    - product
- Use checklist for start-up, if required
- Energize/power up equipment, if required
- Check readouts to verify required settings are achieved:
- Calibrate equipment, if applicable:
  - ✓ ensure all scales or weighing equipment are set correctly, e.g. zeroing of scales, taring of materials
- Listen for unusual noises or other malfunctions, e.g. squeaking, grinding
- Take corrective action for abnormalities, e.g. make minor adjustments, notify supervisor
- Report any changes or deviations from Standard Operating Procedures (SOPs)

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety practices
- Continuous improvement practices
- How to operate equipment controls
- Equipment settings, for example:
  - ✓ temperature controls
  - ✓ speed controls
  - ✓ Programmable Logic Controls (PLC)
  - ✓ switches

- Equipment operating ranges, specified settings and limitations
- Product/customer specifications
- Types of processes, e.g. grinding, cooking, stuffing, tumbling, pasteurization

### **Variables, Range of Context**

- Types of equipment and related processes
- Types of readouts, e.g. gauges, graphs, digital readouts, colour-coded lights
- Equipment settings for different ingredients/products and customer specifications

### **Glossary**

**Calibrate** - to determine, check, or rectify the graduation of any instrument giving quantitative measurements.

## **Monitor food processing equipment operation**

### **Purpose of the Task**

It is important to be proactive and aware of when equipment is not functioning optimally in order to prevent damage to equipment. Being alert, recognizing indicators of potential problems and making minor adjustments to equipment can prevent costly repairs, equipment downtime and issues with product quality.

### **Performance**

- Use required PPE, e.g. safety glasses, safety footwear
- Monitor equipment operation:
  - ✓ listen for unusual noises, e.g. squeaking, grinding
  - ✓ observe non-conforming changes in product, e.g. size, colour, density, shape, thickness
  - ✓ observe unusual fluctuations in readings, e.g. temperature
  - ✓ note increasing frequency of alarms or alerts
- Record and verify control settings, as required, e.g. manually, electronically
- Take corrective action when readings deviate from intended set points, for example:
  - ✓ check set-up
  - ✓ manually adjust equipment settings, according to environmental change, for example:
    - increase/decrease temperature
    - increase/decrease speed
    - increase/decrease valve opening
  - ✓ troubleshoot minor equipment issues, as necessary
- Document adjustments made to equipment settings
- Report setting adjustments and/or deviations from Standard Operating Procedures (SOPs) to appropriate personnel, e.g. supervisor, quality assurance:
  - ✓ explain step-by-step what issues were observed
  - ✓ explain sequence of actions taken



## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Operation of equipment
- Equipment set up
- Equipment settings, for example:
  - ✓ temperature controls
  - ✓ speed controls
  - ✓ Programmable Logic Controls (PLC)
  - ✓ switches
- Equipment operating ranges, specified settings and limitations
- Purpose of equipment, e.g. to shape, to heat, to separate
- Strengths and weaknesses/limitations of equipment and new technology
- Types of processes, e.g. baking, cooking, pasteurization, steeping, sterilization.
- Impact of control settings on product, safety and hygiene
- Implications of control setting adjustments on entire process
- Ingredient/product quality standards and customer specifications for in-process and finished products
- Indicators of sub-standard ingredients/product
- Indicators of equipment wear
- Indicators of operational malfunctions, e.g. stuck valves, low oil levels, visual defects or irregularities
- Level of personal authority to address issues and solve equipment problems, i.e. parameters within which control adjustments can take place

## Variables, Range of Context

- Types of equipment for different processes
- Equipment configurations
- Level of automation and instrumentation
- Types of readouts, e.g. gauges, graphs, digital readouts, colour-coded lights
- Equipment settings for different ingredients/products and customers
- Level of authority to adjust equipment

## Perform food processing changeovers

### Purpose of the Task

Changeovers occur when production shifts from one product to another. Changeovers can occur with the same product being treated differently for different lines of product, for example chicken wings being mixed with different types of sauces or when the actual product changes, for example from soybeans to peas and carrots being frozen. A changeover may also be necessary if the quantity, size, weight or volume of the same product changes, depending on the type of product. Changeovers can require a shutdown for cleaning and sanitation depending on the previous product and the changeover product.

### Performance

- Check schedule for changeover dates/times

- Check changeover requirements, for example:
  - ✓ allowed changeover time, e.g. equipment shutdown time
  - ✓ changeover product
  - ✓ new specifications
  - ✓ new coding requirements, e.g. allergens
  - ✓ food safety considerations for equipment cleaning/sanitation requirements, especially for specific designations, e.g. allergen-free, gluten-free, halal, kosher
- Prepare for changeover in advance of changeover date/times:
  - ✓ check inventory levels of raw materials, if applicable
  - ✓ gather required tools for equipment shutdown, if required
- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, ear protection
- Use required food safety and hygiene equipment, e.g. hair nets, beard nets, aprons, gloves, smocks
- Shutdown and lock out equipment for cleaning and sanitization of line for changeover, if required after last batch of current product
- Prepare new batch when processing equipment is ready to re-start
- Adjust processing equipment settings according to recipe instructions, for example:
  - ✓ weight or size of batch
  - ✓ temperature and humidity
  - ✓ speed and timing through stages
  - ✓ new or additional stages/processes
- Re-start processing line and introduce new batch/in-process product, as instructed
- Monitor beginning of processing run closely to ensure in-process product specifications are being met:
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if product is not meeting specifications
  - ✓ take corrective action, if applicable
  - ✓ document actions taken
- Store or transfer in-process products to next stage, e.g. belt, conveyer, slide, pipe:
  - ✓ date and label, as required

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety practices
- Changeover standards, e.g. time allocation
- Production schedule
- Implications of a changeover, e.g. food safety requirements, coding changes, required downtime
- Product specifications for changeover product
- Organization's customers
- Organization's products and variations
- Organization's product codes
- Packaging equipment requirements
- Required tools
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable

- Raw material/in-process product characteristics and properties, e.g. texture, viscosity, colour, odour
- Quality standards of raw material/in-process products and resulting mixture
- Food safety standards, e.g. cross-contamination, allergens
- Process flow from start to finish, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Importance of meeting task completion timeline

### **Variables, Range of Context**

- Type and number of product(s) being produced
- Changeover product specifications
- Different capacities, sizes and configurations of product feed and processing equipment
- Changeover standards, depending on type of changeover product
- Availability of raw materials/ingredients
- Skill levels of personnel
- Size of operation, e.g. amounts being packaged
- Level of automation, e.g. number of packaging lines
- Equipment configuration, e.g. portioning and packaging together

### **Glossary**

**Changeover time** - period required to prepare a device, machine, process or system to change from producing the last good/product of the batch to producing the first good piece of the new batch. A changeover is different than a set-up, although a changeover can include a set-up.

## **Perform minor maintenance on food processing equipment**

### **Purpose of the Task**

To prevent damage to equipment, it is important to be proactive and be aware of when equipment is not functioning optimally. Performing minor maintenance can prevent costly repairs and equipment downtime later.

### **Performance**

- Check preventative maintenance schedule
- Refer to instructions/equipment manuals
- Use required Personal Protective Equipment (PPE), e.g. safety glasses, safety footwear
- Apply specified lubricant, (e.g. food safe oil or grease) as per lubrication schedule or as needed
- Clean lubrication points when completed
- Wipe surfaces to remove build-up, if applicable, e.g. cutting blades
- Change minor parts/components, e.g. gaskets, filters
- Use designated tools to perform minor maintenance tasks, e.g. key/wrench, screwdriver
- Inspect replaced parts/components for wear
- Document observations and actions taken, e.g. complete check sheet/lists:
  - ✓ explain step-by-step what issues were observed

- ✓ explain sequence of actions taken

## Knowledge

- Types of equipment
- How system operates and how components are connected, i.e. closed or open systems
- Operational hazards, e.g. bite zones, pinch points
- Safety procedures for equipment
- Strengths and weaknesses/limitations of equipment and new technology
- Oils and lubricants approved for use, e.g. consumable- grade, food grade or regulatory approved
- Oiling and lubricating application equipment, e.g. manual and automated
- Preventative Maintenance (PM) program related to operations
- Preventative maintenance schedule
- Purpose of lubrication and preventative maintenance
- Effects of over/under lubrication
- Indicators of parts/component wear
- Indicators of need for oil/lubrication
- Level of personal authority to address issues and solve equipment problems, i.e. parameters within which minor maintenance can be performed

## Variables, Range of Context

- Different types of equipment
- Different types of oils and lubricants
- Different oil and lubricant requirements for types of equipment and food processes
- Operating parameters of equipment
- Component configurations and types of connections

## Troubleshoot minor food processing equipment problems

### Purpose of the Task

It is important to be proactive and recognize when equipment is not functioning optimally. Troubleshooting minor issues can prevent costly repairs and equipment downtime. Operators must recognize when equipment is malfunctioning and the required protocols that must be followed.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety glasses, safety footwear
- Observe the equipment to identify signs of dysfunction:
  - ✓ use all senses, e.g. smell, sight, hearing
- Identify problem area, for example:
  - ✓ unusual sounds
  - ✓ misalignment
  - ✓ changes in synchronization
  - ✓ timing that is off
  - ✓ gauges reading incorrectly

- ✓ equipment wear
- ✓ heat fluctuations, e.g. too hot or not hot enough
- ✓ discolouration of lubricants
- ✓ bad or unusual smells
- ✓ product is not meeting specifications, e.g. incorrect volume, wrong colour
- Verify safety components are operational on equipment
- Lock/tag- out equipment, if required
- Assess potential sources of problem
- Determine likely cause of problem:
  - ✓ begin by eliminating common issues as possible causes
  - ✓ use systematic process to eliminate other possible causes
- Address cause of problem, if possible, e.g. adjust equipment or settings to maintain operational parameters
- Collaborate with others to solve problem, if appropriate, e.g. supervisor, co-worker
- Contact others with expertise (e.g. supervisor, facility maintenance) if problem cannot be solved:
  - ✓ explain step-by-step what issues were observed and what actions were taken
- Document defects or problems and solutions, as required

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Types of equipment
- How system operates and how components are connected, i.e. closed or open systems
- Strengths and weaknesses/limitations of equipment and new technology
- Equipment parameters
- Equipment component functions
- Process requirements, e.g. temperature, time
- Equipment hazards
- Lock/tag-out procedures
- Ingredient/product quality standards and customer specifications for in-process and finished products
- Common equipment problems and their indicators, e.g. incorrect product colour
- Indicators of wear
- Effects of over/under lubrication
- Indicators of parts/component wear
- Indicators of need for oil/lubrication
- Level of personal authority to address issues and solve equipment problems, i.e. parameters within which troubleshooting can be performed

## Variables, Range of Context

- Types of equipment
- Operating parameters of equipment
- Food processing requirements for different types of foods
- Equipment hazards
- Component configurations and types of connections

## Use Food Processing Hand and Power Tools

### Purpose of the Task

Many hand and power tools are specifically designed for their use. Proper maintenance and use is important to ensure food safety and optimal operation.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety glasses, safety footwear, gloves
- Confirm hand tools and power tools are clean, available for use and appropriate for the task
- Use tools that are in safe working condition, e.g. power cords are not frayed, no cracks or pieces broken off
- Inform supervisor if tools are not safe for use and do not use:
  - ✓ remove from production area
  - ✓ lock/tag-out, as required
  - ✓ document actions, if applicable
- Use hand and power tools only for intended purpose in designated production area
- Ensure personal hand tools are stored in appropriate holder on person and are clean and sanitized before use
- Care for tools after use:
  - ✓ check tools for damage, e.g. pieces of blade missing
  - ✓ disassemble/assemble hand tools for cleaning and sanitizing, as necessary
  - ✓ only clean specified components of power tools, e.g. blades
  - ✓ sanitize, as appropriate
  - ✓ account for hand and power tools before end of shift
- Store in designated location, for example:
  - ✓ in colour-coded bins
  - ✓ on designated hooks
  - ✓ in tool scabbards

### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety Practices
- Types and purpose of hand tools
- Critical control points
- Cross contamination risks
- Equipment sanitation protocols
- Types of processes that require hand tools
- Types of processes that require power tools
- Documentation requirements

### Variables, Range of Context

- Types of processes requiring specific hand tools

- Types of construction of same tools for different purposes
- Capacities, sizes and configurations of hand tools
- Size of operation, e.g. amounts being processed
- Level of automation
- Equipment configuration

## Use knives and saws

### Purpose of the Task

Knives and electric blades and saws are a very specific hand tool typically used in meat and seafood processing. These specialized tools require skill and technique to use properly and efficiently and require specific maintenance and care. There is a high potential risk for injury when using knives and electric blades and saws.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety glasses, safety footwear, mesh gloves
- Use knives and saws for intended purpose
- Use correct type of knife for cutting task, for example:
  - ✓ boning knife to cut meat away from bones
  - ✓ scimitar to fabricate meat cuts
  - ✓ electric blades to remove hides from carcasses
  - ✓ filleting knife to remove fish from skin
  - ✓ box cutters to open packaging
- Use knives:
  - ✓ select best knife for task
  - ✓ check knife condition, do not use if:
    - dull
    - blade is loose
    - handle is broken or damaged or not a nonslip material
  - ✓ use knives to trim, portion, de-bone, chop, fillet, gut, skin, peel meat and other food products:
    - make clean and efficient cuts, minimizing waste
  - ✓ notify supervisor if knives need to be repaired, sharpened or replaced
- Maintain knives:
  - ✓ clean and sanitize knives:
    - do not leave submerged in water
  - ✓ sharpen knives as needed, using a stone or sharpening service
  - ✓ steel knives before and during use
  - ✓ store separately, away from other tools
  - ✓ store in designated location in designated holders, e.g. sheaths, rolls
- Use correct type of saw for cutting task, for example:
  - ✓ electric band saw to cut through bone or frozen product and for uniform slicing
  - ✓ power saws to cut carcasses
  - ✓ hand saw with correct size blade to cut bone and cartilage of carcasses

- Operate power saw:
  - ✓ verify physical set-up
  - ✓ ensure safety guards are in place
  - ✓ set specific equipment controls, e.g. speed
  - ✓ wear appropriate Personal Protective Equipment (PPE) use checklist for start-up, if required
  - ✓ energize/power up equipment
  - ✓ monitor operations
  - ✓ troubleshoot problems as needed
  - ✓ report and document changes or deviations from Standard Operating Procedures (SOPs)
- Maintain saw, for example:
  - ✓ replace blade for specific purposes or when dull
  - ✓ carry out preventative maintenance
- Complete documentation, as required, e.g. report lost or damaged tools

### **Knowledge**

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety
- Required knives and saws for specific tasks
- Cutting techniques, e.g. positions for holding knife and knife manipulation
- Indicators of wear and dullness of knife and saw cutting edges
- Sharpening procedures for knives
- Indicators of unsafe operating condition for powered equipment, e.g. lack or malfunctioning safety guards, frayed power guards
- Personal Protective Equipment specific for working with knives, e.g. cutting gloves and apron
- Effective cutting techniques to cut accurately and efficiently
- Documentation procedures

### **Variables, Range of Context**

- Sizes and types of ingredients that may be cut
- Types of knives and power cutting tools
- Level of automation
- Employees may or may not be authorized to sharpen blades



## Sanitation

### F.1. Sanitize Food Processing Equipment and Tools

#### F.1.1. Sanitize fish and seafood workstations

##### Purpose of the Task

Proper sanitizing of equipment is critical to ensure that all equipment and components within a food processing facility remain free from contaminants and bacteria that could compromise the integrity and safety of the food products being processed and delivered to market. Fish and Seafood processors are responsible for applying the appropriate solutions, as directed, to work areas and equipment.

##### Performance

- Use required personal protective equipment (PPE), e.g. safety glasses, face shield, gloves
- Obtain approved cleaning and sanitizing solutions from appropriate personnel, e.g. supervisor, lead hand
- Apply sanitizing agents to work station, e.g. spray down work area
- Sanitize equipment with provided sanitizing solutions
- Sanitize hands/gloves in provided sanitizing solutions, as required
- Report any issues with solutions or sanitizing processes to appropriate personnel, e.g. supervisor

##### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Occupational Health and Safety practices
- Sanitizing procedures
- How to open up or take apart simple pieces of equipment to be sanitized
- WHMIS and specific chemical hazards and associated controls

##### Variables, Range of Context

- Types of sanitizer being used
- Method of sanitization being used
- Location of equipment being sanitized

##### Glossary

**Sanitizing** - The treatment of a clean surface with a chemical or physical agent (e.g. heat) to reduce microorganisms that cause disease and/or spoilage to levels considered safe for public health. By definition, sanitizing a food contact surface must reduce the population of specific bacteria by 99.999 percent in 30 seconds. Non-food contact surfaces require a reduction of 99.9 percent, also with 30 seconds. When microbial populations are reduced to these levels, the surfaces are considered to be microbiologically clean.

**WHMIS** - The short form for Workplace Hazardous Materials Information System. It is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, safety data sheets (SDS) and worker education programs.

## Clean Closed Systems/Clean-in-Place (CIP)

### Prepare CIP system for cleaning

#### Purpose of the Task

Clean-in-place (CIP) is a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly. CIP is faster, less labour-intensive, and poses a lower risk of chemical exposure than traditional cleaning and sanitizing methods. CIP is also very efficient, reducing equipment down-time between product runs and product change-overs. Successful cleaning between production runs avoids potential contamination and the creation of products that do not meet quality standards. Carrying out CIP correctly ensures secure barriers between food flows and cleaning chemical flows. Preparing the system for cleaning is important to ensure that using the CIP system goes smoothly.

#### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
- Ensure inputs are available in necessary quantities, e.g. chemicals, detergents
- Ensure CIP equipment is ready for operation, e.g. clamps, hoses, CIP cart with reservoirs
- Ensure chemicals are handled and stored safely, e.g. away from operator's normal position
- Isolate food processing equipment by closing upstream and downstream valves:
  - ✓ ensure food processing equipment is empty of product
- Pre-rinse food processing equipment to remove matter/residue, as required:
  - ✓ ensure correct water temperature, e.g. 40-60 degrees Celsius
  - ✓ ensure correct water pressure
- Attach spray heads if required
- Notify appropriate personnel of deviations from standard, e.g. equipment temperature deviations

#### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMPs)
- Dairy production and processing activities
- Communication protocols
- Applicable regulations
- Health and safety hazards
- WHMIS requirements for relevant chemicals
- Documentation requirements for cleaning and sanitation
- Types of CIP systems and their uses, i.e. highly turbulent, high flow-rate solution (pipe cleaning); low-energy spray to full wet surfaces; high energy impinging spray
- CIP and its cleaning processes, including required temperature ranges, chemical concentration requirements, radiation doses, contact time, pressure levels
- Types of food soiling, e.g. organic vs. inorganic soiling, effects of temperature, mineral fouling, protein fouling
- Components of the CIP system, including pumps, spray balls, pneumatically-operated valves, recirculation pipes
- CIP chemicals and their purposes, e.g. alkaline detergents (NaOH or detergent based on NaOH) dissolve fats, protein, sugars
- Importance of water quality in CIP process

## Variables, Range of Context

- Different types, capacities, sizes and configurations of equipment
- Size of operation, e.g. amounts being processed
- Level of automation
- Level of authority to take corrective action
- Types of processes and products

## Glossary

**Clean-In-Place (CIP)** - A method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly.

## Monitor CIP system

### Purpose of the Task

Clean-in-place (CIP) is a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly. CIP is faster, less labour-intensive, and poses a lower risk of chemical exposure than traditional cleaning and sanitizing methods. CIP is also very efficient, reducing equipment down-time between product runs and product change-overs. Successful cleaning between production runs avoids potential contamination and the creation of products that do not meet quality standards. Carrying out CIP correctly ensures secure barriers between food flows and cleaning chemical flows.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
- Start CIP process, as required
- Monitor CIP process, including:
  - ✓ alkali circulation, i.e. removal of organics
  - ✓ rinsing, i.e. purging of dissolved soil and detergent residue
  - ✓ acid circulation, i.e. dissolving of mineral salts and deposits from hard water
  - ✓ final rinse, e.g. purging of dissolved soil and detergent residues
- Control temperature:
  - ✓ monitor temperature levels
  - ✓ adjust temperature, as needed
- Control time:
  - ✓ monitor system times, e.g. contact time
  - ✓ adjust system, as needed
- Control concentration of inputs/detergent:
  - ✓ monitor concentration levels, e.g. measure conductivity of solution
  - ✓ adjust, as needed
- Ensure chemicals are handled and stored safely:
  - ✓ for single-use CIP, dispose of cleaning solutions, as required

- ✓ for recovery CIP, store recovery cleaning solutions as required for future use in designated location, e.g. away from operator's normal position
- Notify appropriate personnel of deviations from standard, e.g. equipment temperature deviations, unsafe changes in chemical concentrations
- Initiate sanitation processes, as necessary

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMPs)
- Production and processing activities
- Communication protocols
- Applicable regulations
- Health and safety hazards
- WHMIS requirements for relevant chemicals
- Documentation requirements for cleaning and sanitation
- Types of CIP systems and their uses, i.e. highly turbulent, high flow-rate solution (pipe cleaning); low-energy spray to full wet surfaces; high energy impinging spray
- CIP and its cleaning processes, including required temperature ranges, chemical concentration requirements, radiation doses, contact time, pressure levels
- Types of food soiling, e.g., organic vs. inorganic soiling, effects of temperature, mineral fouling, protein fouling
- Components of the CIP system, including pumps, spray balls, pneumatically-operated valves, recirculation pipes
- CIP chemicals and their purposes, e.g. alkaline detergents (H<sub>2</sub>O<sub>2</sub> or detergent based on NaOH) dissolve fats, protein, sugars
- Importance of water quality in CIP process

## Variables, Range of Context

- Different types, capacities, sizes and configurations of equipment
- Size of operation, e.g. amounts being processed
- Level of automation
- Level of authority to take corrective action
- Types of processes and product

## Glossary

**Clean-in-place (CIP)** - a method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly.

**Recovery CIP** - cleaning solutions used in CIP is not very dirty after one cleaning cycle, and can be reused in the CIP process.

**Single-use CIP** - cleaning solutions used in CIP and immediately disposed of after use.

## Food Packaging

### Package Product

#### Prepare packaging materials

##### Purpose of the Task

With print packaging made from every type of material, it is extremely important to ensure that the correct type of packaging is used and that the printed information corresponds to the product being packaged. It also seems that packaging is increasingly being automated. Understanding how the packaging is assembled in order to feed equipment is important to an efficient packaging process. With increasing automation, some packages are assembled around the product

##### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Confirm correct packaging material for specific product/customer is available for manual or automatic feed:
  - ✓ confirm customer specific requirements are set up, e.g. specific labels, printed packages
  - ✓ confirm packaging material lot codes
- Install packaging material for automatic feed equipment
- Set up packaging material in work station for manual feed
- Confirm product traceability codes, i.e. product lot code
- Confirm additional labelling requirements, e.g. expiry dates, time stamps, customer specific labels
- Perform changeover, if required
- Maintain packaging materials in clean environment, e.g. cover unused materials with clear poly

##### Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
- Packaging requirements for each product
- Packaging specifications for each customer
- Importance of meeting task completion timeline
- Food safety standards, e.g. cross-contamination, allergens
- Quality standards for packaging materials
- Packaging equipment operating controls, parameters and capacity
- Packaging capacity and sizes
- Portion size
- Product codes
- Product packaging lot codes
- Changeover procedure
- Purpose of changeover
- Changeover requirements

## Variables, Range of Context

- Packaging material, for example: film, can, box, bag, bottle, tetra pack, envelope
- Poly thickness, which impacts heat settings, bag breakage and tension settings
- Different capacities, sizes and configurations of packaging equipment
- Size of operation, e.g. amounts being processed
- Level of automation
- Equipment configuration, e.g. product feed
- Changeover frequency

## Glossary

**Primary packaging** - Packaging material that is direct contact with the food product, e.g. sealed bag that holds dry cereal.

**Secondary packaging** - Packaging material that holds the food product in its primary packaging, e.g. printed box that contains the sealed bag of dry cereal.

## Portion/ Weigh product

### Purpose of the Task

In order to package products, the product needs to be portioned into consistent-sized/weighed pieces. Some plants are able to portion/weigh/count, and package product at the same time.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
- Use specified equipment to portion product
- Maintain required product temperature
- Calibrate portioning equipment, if required:
  - ✓ document calibration
- Portion product:
  - ✓ follow specified portion size in formula/recipe, e.g. number of units, weight, volume
  - ✓ for automatic portioning/weighing:
    - program portion size/weight for the specific product
    - monitor product feed into packaging, e.g. packaging alignment with feeder to minimize spillage
    - check package seals for damage,( e.g. punctures/gaps) before entering feeder to minimize spillage
  - ✓ for manual portioning, take measurement (e.g. weight, volume) before placing in packaging
  - ✓ document weights/counts, if required
- Remove out-of-specification product and set aside:
  - ✓ notify supervisor
- Monitor process:
  - ✓ compare packaged product to quality standards

- ✓ re-package/recycle packaged product that does not meet specifications, if able
- ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of packaged product that does not meet specifications increases
- ✓ take corrective action, if applicable
- ✓ document actions taken
- Perform product packaging changeover, if required
- Wash and sanitize between different product runs to prevent cross contamination, if required, e.g. switching from an allergen product to another product

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Calibration of measuring equipment
- Packaging equipment operating controls, parameters and capacity
- Packaging requirements
- Product specifications
- Product requirements, e.g. temperature
- Product portion/weight/count specifications
- Changeover procedure
- Sanitation procedures for measuring equipment

## Variables, Range of Context

- Types of portioning equipment to measure volume/weight/counts
- Different capacities, sizes and types of packaging and packaging materials
- Different capacities, sizes and configurations of product feed and packaging equipment
- Size of operation, e.g. amounts being processed, different products being processed
- Level of automation
- Equipment configuration
- Changeover frequency

## Fill and seal packages

### Purpose of the Task

Product is packaged in an efficient and consistent manner, and properly sealed in order to provide a safe product for the end consumer. Food products and their packaging materials have their own quality and safety specifications that must be met.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
- Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
- Apply appropriate coding (e.g. traceability, production, best before date, size) to package, for example:
  - ✓ can, box bag, bottle, carton, jug, envelope

- Verify product contents match packaging information, e.g. correct percentage butterfat is in correct container, correct product size/weight, identifies allergens
- Add other components into package, e.g. CO2 gas
- Use specified equipment to fill and seal package:
  - ✓ guide/dispense/insert product into approved, specified packaging, e.g. can, box, bag, container, bottle, tray, envelope
- Verify product quality
- Verify piece counts, if applicable
- Verify product weight and volume, if applicable
- Ensure packaging materials match product
- Seal packaging, e.g. heat seal, cap, glue, tape
- Verify package seals
- Send sealed product through metal detector/x-ray
- Replace/thread packaging materials into automatic packaging equipment, as required
- Monitor process:
  - ✓ compare in-process product to quality standards e.g complete seal, seal alignment
  - ✓ discard in-process product that does not meet specifications or recycle for reuse
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of in-process product that does not meet specifications increases
  - ✓ take corrective action, if applicable
  - ✓ document actions taken
- Document packaging counts, if required, reconcile:
  - ✓ amount of product packed
  - ✓ product packaging used
  - ✓ amount of finished product
  - ✓ account for product and packaging waste, if applicable

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
- Importance of meeting task completion timeline
- Packaging equipment operating controls, parameters and capacity
- Labelling equipment operating controls, parameters and capacity
- Required product coding
- Packaging types and uses for specific products and customers
- Portion specifications, e.g. weight, volume, count
- Product quality specifications
- Product packaging quality specifications
- Customer requirements/specification



## Variables, Range of Context

- Different capacities, sizes and types of packaging and packaging materials
- Different capacities, sizes and configurations of product feed and packaging equipment
- Size of operation, e.g. amounts being packaged
- Level of automation
- Equipment configuration, e.g. portioning and packaging together
- Number of customer requirements/specifications

## Bottle/Can in-process products

### Purpose of the Task

To safely fill and seal food products in cans and glass or plastic bottles for consumers.

### Performance

- Use appropriate Personal Protective Equipment (PPE), e.g. gloves, apron, safety footwear, safety glasses, bump caps/hard hats
- Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
- Use required equipment to wash cans, glass or plastic containers, for example:
  - ✓ ensure work area is clean and safe for production
  - ✓ set up cans or bottles to feed into equipment
  - ✓ set controls for type and size of container
  - ✓ set air pressures for blowing out impurities from containers or water control for rinsing containers
  - ✓ monitor cleanliness of containers before filling
- Fill and seal raw materials or in-process products into cans, glass or plastic containers:
  - ✓ set controls for quantity of product, based on size of container, weight, speeds and output
  - ✓ meet process control points, e.g. Electronic Bottle Inspector (EBI) for container integrity, container evacuation for pressure differential for proper filling
  - ✓ meet quality control points, e.g. date codes
- Monitor process:
  - ✓ monitor supply level and flow of product into containers
  - ✓ monitor cap/lid alignment or induction seal application
  - ✓ monitor sealing of container, (e.g. steam sealing of lids to jars, properly crimped can lids, screw cap capsules) and document as required
  - ✓ compare in-process product to quality standards
  - ✓ discard in-process product that does not meet specifications or recycle for reuse, e.g. dented cans, cracked bottles, incorrect seals
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if bottled/canned product that does not meet specifications increases
  - ✓ take corrective action, if applicable
  - ✓ document actions taken
- Transfer bottled/canned products to next stage, e.g. belt, conveyer, slide

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Equipment operating parameters and capacity
- Ingredient/product characteristics, e.g. colour, level of carbonation
- Ingredient/product requirements, e.g. product temperature
- Different product container types and volumes
- Different product coding requirements, e.g. date/time stamp
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Bottling/canning equipment operating controls, parameters and capacity, e.g. speed, volume of product for different size containers, emergency shutdown procedures

## Variables, Range of Context

- Types of products that can be bottled or canned
- Different capacities, speeds, sizes and configurations of equipment
- Size of operation, e.g. numbers of bottles and cans being filled, number of lines being run
- Level of automation
- Equipment configuration, e.g. cleaning, filling, labelling
- Types and shapes of plastic or glass bottles and containers, and cans

## Label products

### Purpose of the Task

Product information in the form of codes and labels need to be applied to product if they are not printed on the packaging in order to comply with labelling regulations as well as provide information to the public consumer of the product.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
- Obtain required information to set parameters for production run
- Match label to product e.g. customer specifications, allergen alerts
- Operate labelling equipment, for example:
  - ✓ laser, inkjet printer
  - ✓ stamper
  - ✓ label gun with adhesive labels
  - ✓ cold glue applicators
  - ✓ computerized tracking/registration systems
- Prepare and apply adhesives, if applicable
- Apply labels; align labeler with package feed
- Apply date code stamps

- Operate equipment to verify labelling, for example:
  - ✓ vision system
  - ✓ matrix bar code readers
  - ✓ scanning guns
- Visually inspect labelled products for quality, alignment, placement and seal
- Verify product date coding, e.g. expiry date, best before, manufactured date:
  - ✓ document as required
- Verify product size/product code:
  - ✓ document as required
- Monitor process:
  - ✓ compare in-process product to quality standards
  - ✓ discard in-process product that does not meet specifications or recycle for reuse
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of in-process product that does not meet specifications increases
  - ✓ take corrective action, if applicable
  - ✓ document actions taken

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
- Importance of meeting task completion timeline
- Labelling equipment operating controls, parameters and capacity
- Types of labels, e.g. adhesive labels, stamps, printed packaging, labelled shrink wrap
- Label codes and formats
- Label contents, for example:
  - ✓ weight or volume
  - ✓ best before date
  - ✓ establishment number
  - ✓ production date and equipment lines
  - ✓ actual fill date
  - ✓ product identification code
  - ✓ contents/ingredient list
  - ✓ nutritional information
  - ✓ bar code
  - ✓ allergen information
  - ✓ language translation, if required
- Regulatory compliance
- Customer requirements/specifications, e.g. date code format

## Variables, Range of Context

- Different types of labels, and printed packaging
- Different capacities, sizes and configurations of labelling equipment
- Different types of product packages
- Size of operation, e.g. amounts being packaged
- Level of automation
- Equipment configuration
- Number of customer requirements/specifications
- Shipping destinations
- Additional requirements for international customers, e.g. certificate number

## Tray/Box products

### Purpose of the Task

Some product must be packed in trays or boxed for ease of handling, e.g. small bars, 1kg icing bags, envelopes. This is important for shelving by retailers and can also be designed to help market the product.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
- Operate specified equipment or manually tray/box product
- Prepare for packing trays/boxes, if applicable:
  - ✓ set up equipment for specified packing configuration
  - ✓ align sealing equipment with tray/box feed
  - ✓ align labelers with sealed tray/box feed
- Tray/box product:
  - ✓ monitor packing configuration, e.g. number of units per box
  - ✓ verify accuracy of bag count in boxes
  - ✓ seal outer packing with tamper evidence seal, e.g. zap strapping, hot glue, shrink wrap, tape
  - ✓ apply bar code or check weigh label, as required
  - ✓ verify size production and best before dates on packaging/label
- Visually inspect tray/box seal
- Scan/document product to inventory
- Monitor process:
  - ✓ compare trays/boxes to quality standards
  - ✓ re-pack trays/boxes that does not meet specifications
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of trays/boxes that do not meet specifications increases
  - ✓ take corrective action, if applicable, e.g. troubleshoot equipment
  - ✓ document actions taken
- Transfer trays/boxes of product to next stage of processing, if applicable, e.g. freezing, palletizing

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
- Customer requirements/specifications, e.g. date code format
- Importance of meeting task completion timeline
- Boxing, labelling and sealing equipment operating controls, parameters and capacity, for example:
  - ✓ robotic boxers
  - ✓ shrink wrappers and heat tunnels
- Types of sealing, e.g. zap strapping, hot glue, shrink-wrap, tape
- Bar codes
- Inventory system
- Packing configurations
- Number of units per box

## Variables, Range of Context

- Different types and sizes of tray/boxes
- Wrapping/sealing materials
- Boxing equipment operating controls, parameters, and capacity
- Size of operation, e.g. amounts being packaged
- Level of automation
- Equipment configuration
- Customer requirements/specifications
- Shipping requirements for product, e.g. frozen product

## Perform packaging materials changeover

### Purpose of the Task

When there are product changes, or when product is being packaged for different customers, different packages may be required. This can involve different packaging, different package sizes, different labels and codes, and even trays/boxes. These conditions require a packaging changeover.

### Performance

- Check schedule for changeover dates/times
- Check changeover requirements, for example:
  - ✓ type of changeover, e.g. allergen containing product
  - ✓ allowed changeover time
  - ✓ new packaging, e.g. size, type, customer-specific
  - ✓ packaging specifications

- ✓ labels and codes
- ✓ trays/boxes, size and specifications, e.g. number packages per tray/box
- ✓ specified pallets and stacking instructions
- Prepare for changeover in advance of changeover date/time:
  - ✓ obtain new packaging materials
  - ✓ gather required tools
  - ✓ notify appropriate personnel, e.g. processing operators, production maintenance
- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, ear protection
- Use required food safety and hygiene equipment, e.g. hair nets, beard nets, aprons, gloves, smocks
- Reduce current packaging lines in order to prepare other line(s) for changeover, if applicable
- Finish one product or pack style to empty line, if applicable, e.g. packaging frozen product
- Remove current packaging materials from packaging equipment
- Clean equipment to specified levels, if applicable, e.g. visually, swab test(s):
  - ✓ sanitize equipment after runs of product containing allergens
- Load new packaging materials for new run on packaging equipment
- Adjust packaging equipment settings, for example:
  - ✓ product quantity, size, weight
  - ✓ package size or type
  - ✓ positions for label and code application
  - ✓ format of labels and codes, e.g. best before dates yyyy/mm/dd, dd/mm/yyyy
  - ✓ number of packages per tray/box
  - ✓ pallet stacking pattern
- Monitor beginning of packaging run closely to ensure packaging specifications are being met:
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if product packaging is not meeting specifications
  - ✓ take corrective action, if applicable
  - ✓ document actions taken

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Production schedule e.g. when products containing allergens are being packaged
- Implications of a changeover, e.g. food safety requirements, coding changes, required downtime
- Product specifications for different packaging sizes and types
- Customers' specifications
- Organization's products, specifications and variations
- Packaging equipment requirements
- Required tools
- Organization's packaging inventory systems
- Requirements for specific designations, e.g. halal, kosher, organic, gluten-free, as applicable
- Importance of meeting task completion timeline

## Variables, Range of Context

- Type of product(s)
- Customer requirements/specifications
- Different capacities, sizes and types of packaging and packaging materials
- Different capacities, sizes and configurations of product feed and packaging equipment
- Size of operation, e.g. amounts being packaged
- Availability of packaging materials, e.g. in stock, on order, lead delivery times
- Level of automation, e.g. number of packaging lines
- Equipment configuration, e.g. portioning and packaging together

## Glossary

**Changeover time** - period required to prepare a device, machine, process or system to change from producing the last good/product of the batch to producing the first good/product of the new batch. A changeover is different than a set-up, although a changeover can include a set-up.

## Palletize products

### Purpose of the Task

For ease of handling, storage and shipping, cartons of product are stacked on pallets in specific patterns to prevent crushing and strapped or wrapped to prevent movement. For certain reasons, such as exporting, specific types of pallets need to be used.

### Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap
- Operate equipment to palletize product or hand stack
- Prepare to palletize product:
  - ✓ set up equipment for specified stacking configuration/pattern
  - ✓ confirm specific pallet specifications, for example:
    - country specific pallets
    - correct colour pallets
    - one-way skids
    - pallet made of specified material, eg. plastic, wood
  - ✓ confirm supply of specified pallets
- Palletize product:
  - ✓ stack pallets with product in specific stacking configuration/pattern
  - ✓ wrap stacked pallet, e.g. shrink wrap, strapping
  - ✓ label pallet, e.g. apply barcode sticker for ease of identification
- Monitor process:
  - ✓ compare palletized product to quality standards
  - ✓ re-stack palletized product that does not meet specifications
  - ✓ notify appropriate personnel (e.g. supervisor, quality control) if frequency of palletized product that does not meet specifications increases

- ✓ take corrective action, if applicable
- ✓ document actions taken
- Confirm packaging and labelling on pallets being stacked
- Enter palletized product to production inventory, e.g. enter information into system manually or with scanner

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Lifting aids and ergonomic limits
- Process flow, for example:
  - ✓ impact of preceding stage on current process stage
  - ✓ effect of current process stage on next stage
- Importance of meeting task completion timeline
- Palletizing equipment operating controls, parameters and capacity, for example:
  - ✓ palletizer
  - ✓ pallet jacks
  - ✓ forklifts
- Stacking configurations/patterns
- Pallet specifications, e.g. specific coloured pallets for shipping to U.S.
- Inventory system, e.g. location numbers of storage areas for palletized product
- Customer requirements, e.g. use of pallet sheet after each row/tier of product
- Product codes and labelling requirements
- Scanning system, e.g. scanning gun

## Variables, Range of Context

- Different types of product and sizes of package require different stacking configurations
- Pallet wrapping materials
- Palletizing equipment control, parameters, and capacity
- Shipping destinations, e.g. domestic or foreign markets
- Level of automation
- Equipment configuration
- Customer requirements/specifications
- Types of pallets, e.g. hardwood, soft wood

## Food Production Management

### Monitor Storage Conditions of In-Process Fish and Seafood

#### Purpose of the Task

To ensure compliance with Health and Safety and Food Safety guidelines, regulations and quality standards in fish and seafood production area.



## Performance

- Use required Personal Protective Equipment (PPE), e.g. safety footwear, bump cap, gloves
- Use appropriate food handling protection equipment, e.g. hair net, beard net, balaclava
- Separate product lots, as required:
  - ✓ document for traceability, as required
- Monitor temperatures:
  - ✓ document temperatures from gauges/thermometers
  - ✓ take corrective action, if required:
    - inform appropriate personnel of actions taken
- Monitor holding conditions, for example:
  - ✓ add ice, as required
  - ✓ add slurry, if required
  - ✓ move products around in storage area, as directed
- Monitor condition of in-process product:
  - ✓ ensure live products are still alive
  - ✓ document condition of in-process product
  - ✓ take corrective action, if required:
    - ✓ inform appropriate personnel of actions taken
- Notify appropriate personnel if environment is different than normal, e.g. abnormal odours, changes in appearance of process ice, temperature deviations

## Knowledge

- Standard Operating Procedures (SOPs)
- Good Manufacturing Practices (GMP)
- Production plans/goals
- Communication protocols
- Applicable regulations
- Health and Safety hazards

## Variables, Range of Context

- Different types, capacities, sizes and configurations of equipment and storage areas
- Size of operation, e.g. quantity being processed
- Level of automation
- Level of authority to take corrective action

## Food Safety Management System

### Comply with Food Safety Management System

#### Purpose of the Task

Following the food safety management system is important to ensure the protection of employees and customers. Failure to comply can have serious consequences, including product that can cause illness and death in the general public.

## Performance

- Participate in annual food safety management system training
- Maintain personal hygiene, including:
  - ✓ wash hands frequently
  - ✓ use hair nets
  - ✓ wear clean clothing
- Ensure workplace is clean and sanitized, as required
- Use safe product handling practices
- Identify hazards associated with products being handled
- Take corrective action when deviations occur
- Report:
  - ✓ unsafe/unsanitary conditions
  - ✓ illness or injury that could impact food safety

## Knowledge

- Organizational policies and procedures
- Organization's food safety management system, e.g. process flow diagram
- Products and intended uses
- Critical control points (CCPs), where applicable
- Effects of incorrect temperature on product, e.g. freezer burn, bacteria growth
- Common foodborne illnesses transmissible by humans

## Variables, Range of Context

- Species-related hazards
- Potential for cross-contamination issues

## Glossary

**Critical Control Point (CCP)** - Specific point, procedure, or step in food manufacturing at which control can be exercised to reduce, eliminate, or prevent the possibility of a food safety hazard.

## Food Traceability

### Comply with Food Traceability

### Comply with Food Traceability system

#### Purpose of the Task

Food traceability provides real-time key manufacturing, quality management and traceability data for recalls. Food traceability systems need to be integrated with an organization's existing IT infrastructure and control systems. It requires an investment in hardware, software and training to ensure that the system will work. Any product produced by the organization should be able to be tracked back to its sources of raw materials.

## Performance

- Refer to production documentation or communicate with supervisor to obtain applicable codes for in-process and finished products
- Verify codes are correct for the day, if required
- Apply assigned codes (e.g. product units, dates/times, batches, lots) to documentation or labels
- Use codes when documenting product data relevant to tasks

## Knowledge

- Good Manufacturing Practices (GMP)
- Standard Operating Procedures (SOPs)
- Purpose and benefits of traceability systems
- Number of products produced
- Equipment used for various processes
- Documentation requirements, manual or electronic
- Existing control systems, e.g. inventory management

## Variables, Range of Context

- Types of traceability systems, e.g. Hazardous Analysis and Critical Control Points (HACCP), British Retail Council (BRC)
- Domestic and foreign market requirements
- Complexity of product processing
- Number of products being produced
- Size of operation, e.g. amounts being processed
- Level of automation

## Glossary

**Traceability** - The ability to trace and follow raw materials, components and products, through all stages of receipt, production, processing and distribution, both forwards and backwards.

## Recalls

### Follow Recall Plan

#### Purpose of the Task

It is important that recall actions/activities occur in a timely and orderly manner. Following the protocols laid out in an organization's recall plan ensures that affected items are handled effectively and efficiently.

#### Performance

- Follow directions of recall team leader regarding corrective actions to take for current situation, for example:
  - ✓ in production, for example:
    - shut down production lines in coordination with production manager

- prepare equipment and/or products for testing
- collect production records for review
- ✓ in quality management, for example:
  - identify source of problem
  - trace inventory back through production lines based on batch/lot numbers, using traceability system data
  - test equipment
  - test raw materials
  - contact regulating authority
- ✓ in warehouse, for example:
  - segregate affected inventory
  - segregate affected raw materials
  - place segregated inventory and raw materials on hold
  - track trace shipments of affected inventory to next point of distribution, e.g. recipients, carriers
  - trace receiving of raw materials, to identify supplier, dates
  - stop further distribution of affected inventory and raw materials
  - collect, segregate and dispose of returned product, if applicable
- ✓ in sales and marketing, for example:
  - inform clients of recalled product and details, and required action
  - launch public communications plan
  - document actions being taken
  - handle calls from public and customers regarding recalled product.
- ✓ in administration/management, for example:
  - participate in communications plan
  - review purchase agreements
  - meet with legal team
  - determine potential/scope of litigation
- Comply with communication plan directives, e.g. do not speak with media, provide information as directed by recall team, e.g. what information, and to whom
- Document actions taken as a result of recall plan:
  - ✓ provide documentation to supervisor/manager
  - ✓ maintain accurate traceability records
  - ✓ identify issues/problems that occur during recall
- Participate in emergency recall management drills

## Knowledge

- Good Manufacturing Practices (GMP)
- Standard Operating Procedures (SOPs)
- Organization's recall plan
- Level of recall
- Product segregation procedures
- Organization's product tracing system and food safety program
- Product and product raw materials, sources of raw materials
- Regulatory authority(ies)

- Organization's distribution network
- Media contacts
- Confidentiality of information
- Potential impact on brand and company image
- Organization's existing supply chain facilities
- Level of insurance protections
- Sales and Purchasing agreements

### **Variables, Range of Context**

- Reason for recall, e.g. labelling error, public health risk
- Different types of food products, e.g. baked goods, meats, vegetables
- Different types of food processes, e.g. fresh, frozen, canned, cooked
- Differences in distribution for different types of products
- Sources/suppliers of raw materials
- Recall time frames depending on type of product and level of risk associated with problem
- Social perceptions of corporate errors, responsibility

### **Glossary**

**Complaints** - consumer complaints about product.

**Product Returns** - ability to record and track returned products and reason for return by consumers.

**Recalls** - an action taken by an organization to remove potentially unsafe food products or products from the market that do not comply with relevant laws. It is the responsibility of organization to remove the product from sale or distribution.

## **Pest Control**

### **Comply with Facility Pest Control Program**

#### **Purpose of the Task**

Following the facility pest control program helps to prevent pests (e.g. insects, rodents and birds) from threatening the quality and safety of products that are produced, stored and shipped from the food processing facility. In addition, compliance helps to identify potential pest issues that require attention before they cause potential harm to products or personnel.

#### **Performance**

- Attend facility pest control program training (as required)
- Comply with all Food Safety and Pest Control policies and procedures when completing all work activities
- Monitor for signs of pests or potential warning signs, for example:
  - ✓ pest sightings

- ✓ sightings of signs of potential infestation, e.g. droppings, nests, feathers, damaged food/ingredients
- ✓ damage to structures or equipment, e.g. holes in walls, gaps in seals, etc.
- Report any findings to supervisor for immediate attention
- Respond to pest sightings according to supervisory direction

## Knowledge

- Pest control program protocols
- Importance of maintaining a pest-free work environment
- Indicators or signs of potential pest infestation
- Policies for handling hazardous waste, e.g. rodent droppings, nests, etc.

## Variables, Range of Context

- Number of employees
- Levels of employee responsibility and authority
- Practices and raw materials leading to high risk of pests

## Waste Management

### Comply with Recycling Program

#### Purpose of the Task

Compliance with the recycling program helps the organization minimize waste, protect the environment and ensures that regulatory requirements are met.

#### Performance

- Attend recycling program training, if applicable
- Differentiate between waste, recyclable and reusable materials in work area
- Dispose of recyclables in appropriate collection bins
- Encourage co-workers to follow program
- Inform maintenance staff when recycling bins are, for example:
  - ✓ overflowing
  - ✓ damaged
  - ✓ unlabelled, e.g. signage is illegible
  - ✓ inaccessible
- Keep up to date with changes to program
- Provide feedback to waste management staff on program, for example:
  - ✓ suggest improvements to recycling program in relation to own department/work area
  - ✓ report non-compliance with recycling program, if required

## Knowledge

- Types of recyclables being collected
- Locations of collection bins in work area

- Overall goals of facility recycling program
- Communication protocols for issues with bins, program, collection times/frequency
- Value of recycling to organization

### **Variables, Range of Context**

- Types and sizes of recyclables being collected
- Frequency of collection
- Co-workers unfamiliar with recycling concepts

## **Health and Safety**

### **Comply with Occupational Health and Safety Program**

#### **Follow occupational health and safety program**

#### **Purpose of the Task**

When all employees adhere to the occupational health and safety program the risk of the occurrence of accidents and injuries significantly decreases, leading to enhanced productivity and worker safety.

#### **Performance**

- Comply with organization policies and procedures regarding occupational health and safety
- Wear personal protective equipment (PPE) as required
- Use machinery, equipment, and materials only as authorized
- Follow written work procedures
- Follow warning signs on equipment and machinery
- Use safe ergonomic practices, e.g. safe lifting, repetitive strain avoidance
- Use safe work principles, e.g. avoid rushing or taking shortcuts, making safety the top priority
- Conduct safety check prior to beginning each shift, as required
- Report hazards, unsafe conditions, or actions to supervisor
- Report accidents, incidents and near misses
- Report all injuries for first aid, regardless of severity
- Cooperate with the Joint Occupational Health and Safety Committee (JOHS) or Health and Safety Representative

#### **Knowledge**

- Personal legal responsibility for following Occupational Health and Safety Program
- Worker's Compensation program, including purpose, responsibilities, compensation and benefits
- Importance of occupational health and safety
- Potential Hazards with the workplace
- Workplace Hazardous Materials Information System (WHMIS) and applicable Safety Data Sheets (SDS)
- Safe ergonomic practices
- Types of common accidents/incidents and their causes
- Locations of safety equipment within facility, e.g. eye wash station, first aid kit, emergency exits
- Joint Occupational Health and Safety Committee (JOHS) members and Health and Safety Representative

- Reporting procedures for hazards, accidents, near misses

### **Variables, Range of Context**

- Provincial/territorial and federal occupational health and safety regulations
- Types of PPE will vary depending upon organization, product and processes, e.g. hard hats, apron, gloves, safety footwear
- Types of chemicals
- Types of equipment

### **Participate in emergency preparation**

#### **Purpose of the Task**

Emergency preparedness is critical for all employees to ensure that in the event of an accident or incident, all involved parties are aware of the protocols and procedures to ensure safety.

#### **Performance**

- Locate fire exits and muster/gathering points throughout the facility
- Locate first aid stations, eye wash stations, Safety Data Sheet (SDS), emergency phones
- Identify individuals training in CPR and first aid
- Use safe handling procedures for handling facility materials, i.e. according to Workplace Hazardous Material Information System (WHMIS)
- Use lock out tag out procedures for equipment
- Participate in emergency drills, e.g. fire, chemical spills, evacuations, critical accidents simulations

#### **Knowledge**

- Organization's policies and procedures, e.g. evacuation plans
- Locations of all first aid stations, eye wash stations, Safety Data Sheet (SDS), emergency phones and muster points throughout the facility
- Emergency contact information, e.g. security system, gas/utilities, fire, Ministry of Environment, Ministry of Labour, senior management, employee emergency contacts
- Workplace Hazardous Materials Information System (WHMIS) and the applicable Safety Data Sheet (SDS)
- Types of common accidents and their causes
- Reporting procedures for emergencies

### **Variables, Range of Context**

- Size and layout of facility
- Number of employees
- Range of potential emergency situations



## Glossary

**Muster point** - A muster point is a designated place or an area where all employees, passengers, or a large crowd assemble in case of an emergency in an installation, building, public place or a watercraft. It is also known as an emergency assembly point (EAP), or, simply, assembly or gathering point.

## Participate in accident/incident investigations

### Purpose of the Task

In the aftermath of an accident/incident at an organization's worksite, all personnel must cooperate with external and internal investigators and follow standard operating procedures.

### Performance

- Notify relevant personnel immediately of accident/incident, e.g. supervisor
- Complete documentation according to standard operating procedures, for example:
  - ✓ use specified form
  - ✓ obtain assistance to complete, if required, e.g. interpreter for ESL staff
  - ✓ be honest and as complete as possible
- Provide documentation to investigative authorities
- Cooperate with investigators:
  - ✓ explain processes and procedures when asked
  - ✓ answer questions honestly
  - ✓ provide employee safety training records, if required
- Continue to carry out work as normal, if possible
- Provide records and documentation as requested, i.e. Worker's Compensation reports, paystubs
- Follow organization's policies and procedures regarding communications

### Knowledge

- Applicable legislation and regulations for organization, e.g. food safety protocols (SOPs), Occupational Health and Safety standards
- Organization's functional areas
- Protocols for external personnel on site, e.g. security
- Roles and responsibilities of workforce
- Organization's physical plant layout
- Equipment information, e.g. maintenance records, age

### Variables, Range of Context

- Size of organization
- Nature and severity of incident/accident
- Past incidents, e.g. number, severity, resolutions

## Comply with Facility Security Program

### Follow facility security program

#### Purpose of the Task

Adherence to security programs and procedures is important for the protection of the organization's assets and the safety of workers.

#### Performance

- Attend security program training
- Provide required information for security protocols/features
- Follow required security procedures, for example:
  - ✓ access and egress to and from facility areas and facility grounds
  - ✓ reporting for work, i.e. signing in and off work/shifts
  - ✓ visitors, e.g. sign in log, visitors pass
  - ✓ reporting presence of strangers without visitor documentation/badge
  - ✓ removal of facility equipment
- Protect intellectual property of organization, e.g. recipes, formulations, product specifications:
  - ✓ follow communication protocols for media, if applicable
- Report loss of keys/electronic pass cards immediately
- Report unusual occurrences, e.g. suspicious packages
- Report unusual use or consumption of regulated chemical and raw materials, e.g. ethanol, cannabis

#### Knowledge

- Security program protocols
- What information is proprietary
- Confidentiality rights and responsibilities
- Indicators of unusual behavior and activities
- Cyber-security

#### Variables, Range of Context

- Number of employees
- Levels of employee responsibility and authority

## Participate in security exercises and drills

#### Purpose of the Task

Practice of security procedures enhances the efficiency and effectiveness of employee response during actual security breaches.

## Performance

- Attend security exercises and drill training
- Identify type of emergency response required, e.g. lockdown
- Take action based on assigned role for type of emergency, for example:
  - ✓ shut down equipment
  - ✓ clear and lockdown areas
  - ✓ report to muster areas
- Provide feedback to supervisors regarding:
  - ✓ activity completion time
  - ✓ areas for improvement
- Keep up to date with changes to procedures

## Knowledge

- Security program protocols
- Types of security breaches
- Roles and responsibilities based on security situation
- Potential security risks
- Locations of security features, e.g. locks

## Variables, Range of Context

- Quantity and types of security risks will vary based on organization's product and facility, e.g. number of access and egress points

## Record Management

### Complete Record Management Tasks

#### Complete forms

#### Purpose of the Task

Forms need to be completed so that data is available to be reported. Information on forms must be clear, concise and accurate to ensure correct records are kept. Accurately completed forms are critical for monitoring and recording food safety measures, monitoring production yields, and inventory control. Forms may be electronic, in which case how to use the computer/interface will be necessary.

## Performance

- Ensure availability of required forms for task, e.g. temperature logs
- Complete forms at designated times, as required, e.g. hourly, per shift
- Ensure information is current and accurate, e.g., dates, calculations, inventory counts
- Ensure information on forms is legible if handwritten
- Store or deliver forms, as directed, e.g. keep with equipment, give to supervisor

- Sign forms, as necessary

### **Knowledge**

- Policies and procedures of the organization
- Importance of correct documentation

### **Variables, Range of Context**

- Technology used in the record management process will vary

## **Organizational Policies and Procedures**

### **Comply with Organizational Policies and Procedures**

### **Comply with organizational policies and procedures/SOPs**

#### **Purpose of the Task**

Personnel must actively engage in policy and SOP compliance in order to ensure quality assurance and food safety, as well as ensuring safety legislation and company key performance indicators are met.

#### **Performance**

- Review organization's policies and SOPs handbook
- Participate in orientation as a new hire
- Take advantage of on-the-job training opportunities
- Complete all tasks according to policies/SOPs
- Communicate with supervisor regularly regarding new and updated SOPs:
  - ✓ ensure SOP being applied is most recent version
- Provide feedback on current policies/SOPs:
  - ✓ identify challenges with compliance
  - ✓ put forward ideas for revisions that to procedures still comply with policy

#### **Knowledge**

- Difference between a policy and a procedure (SOPs)
- Applicable policies and SOPs for work area
- Importance of compliance
- Own role and responsibilities and those of others, e.g. supervisor, apprentices

#### **Variables, Range of Context**

- Size of organization
- Roles and responsibilities of personnel

- Complexity of production (may require more SOPs)
- Level of automation

## Glossary

**Policy** - A written statement that clearly indicated the position and values of the organization on a specific topic. It contains rules and stipulates what to do.

**Standard Operating Procedure (SOP)** – A written set of instruction that describes how to perform the required steps for a particular task or sequence of tasks.

## Leadership

### Manage Organizational Change

### Support organizational change

#### Purpose of the Task

All employees need to embrace change at an individual level. It is important to support organizational change as an individual to contribute to the team and the organization's success. Resistance to change results in a poor work environment and low productivity.

#### Performance

- Be willing to try new ways to carry out tasks:
  - ✓ approach change objectively
  - ✓ keep an open mind
- Take training for new processes/equipment operations
- Provide feedback on effectiveness of change, e.g. observations, outcomes
- Speak positively about potential outcomes and benefits of change
- Determine how change is beneficial to own work situation
- Explain benefits of change to others
- Adapt if implemented changes do not have the anticipated outcomes

#### Knowledge

- Reasons for change
- Barriers to change
- Implications of change
- Organizational resources

#### Variables, Range of Context

- Size of organization
- Management style of organization

- Union or non-union work environment
- Empowerment of employees
- Level of stakeholder engagement
- Degree and type of change

## Glossary

**Stakeholder** - anyone that can be affected by a company's actions, objectives, and policies. This includes both internal stakeholders, such as employees and managers, and external stakeholders, such as shareholders, suppliers, customers, surrounding communities, creditors, government representatives, etc.

## Leadership

### Demonstrate Professionalism

### Collaborate with team members

#### Purpose of the Task

Collaboration is often a crucial part of a business, as it is often necessary for colleagues to work well together, trying their best in any circumstance. Collaboration means that people will try to cooperate, using their individual skills and providing constructive feedback, despite any personal conflict between individuals to achieve the goals of the team and ultimately the mission of the organization. "Team" refers not only to a small work group, but to the organization as a whole.

#### Performance

- Support others:
  - ✓ share knowledge with others
  - ✓ respect individual differences, e.g. strengths and limitations, cultural differences, language
  - ✓ requirements, physical needs and limitations
  - ✓ be receptive to other's opinions
  - ✓ provide feedback in a constructive, timely and professional manner
- Collaborate with representatives from other functional areas of organization, e.g. maintenance, quality control:
  - ✓ share expertise, information and resources
  - ✓ work together on broader organizational objectives
- Work together to achieve goals and resolve issues:
  - ✓ actively participate in team activities, e.g. contribute ideas, carry out tasks
  - ✓ share credit and recognition for achievements
  - ✓ resolve inconsistencies and errors together
- Identify ways to continuously improve own collaboration skills:
  - ✓ reflect on successes and challenges

## Knowledge

- Purpose/goal of team
- Mission statement and values of organization
- Benefits of teamwork
- Strengths and limitations of self and other team members
- Team dynamics
- Other teams in organization
- Relationships between different functional areas of the organization
- Level of personal authority to address issues and solve problems

## Variables, Range of Context

- Size of organization
- Management style of organization
- Union or non-union work environment
- Empowerment of employees
- Level of team member engagement

## Develop professionally

### Purpose of the Task

In order to advance in one's career, prevent skills obsolescence, improve knowledge and skills, it is critical to take advantage of development opportunities and make time to keep up with advances in the industry. Organizations support professional development of their employees for succession planning, to maximize the skills and knowledge of their personnel and to develop/maintain a competitive edge.

### Performance

- Recognize ongoing need for professional development:
  - ✓ review personal skill set
  - ✓ identify personal short- and long-term training needs
  - ✓ assess current and future professional development needs
  - ✓ assess current trends and best practices
- Engage in formal and in-formal training and development activities, for example:
  - ✓ research professional development opportunities
- Enroll in educational and professional seminars, courses, workshops and certification programs:
  - ✓ participate in mentorship programs
  - ✓ volunteer
  - ✓ read industry publications
  - ✓ participate in local trade and business organizations

- ✓ network with industry members
- Access organizational support, e.g. time off, reimbursement of course fees
- Assess the effectiveness of development activities
- Review and update professional development goals

### **Knowledge**

- Professional goals
- Trade and business organizations
- Organizational support for professional development, e.g. time off, course fees
- Available educational and professional seminars, courses, workshops and certification programs

### **Variables, Range of Context**

- Organizational support
- Personal assessment
- Union or non-union work environment
- Position and role of individual

### **Exhibit professional and ethical conduct**

#### **Purpose of the Task**

Professional and ethical conduct promotes a positive image of the industry, organization, brand and oneself and helps to earn the respect of stakeholders, including peers. Being professional also helps to create a positive work environment and sets an example for others.

#### **Performance**

- Represent organization's mission, vision, and values through professional conduct
- Demonstrate professional characteristics, for example:
  - ✓ creativity
  - ✓ courtesy
  - ✓ curiosity
  - ✓ Initiative
  - ✓ dedication
  - ✓ integrity
  - ✓ efficiency
  - ✓ enthusiasm
  - ✓ fairness
  - ✓ flexibility
  - ✓ objectivity
  - ✓ trustworthiness
- Set example for co-workers, colleagues and industry
- Comply with business standards, policies and procedures



- Comply with organization’s Code of Ethics, if applicable
- Maintain confidentiality
- Respect diversity:
  - ✓ monitor personal biases
- Respect co-workers, colleagues, customers and competitors

### **Knowledge**

- Organization’s code of conduct and expectations
- Ethical principles
- Organization’s code of ethics
- Stereotypes (e.g. cultural, racial, sexual, gender) and their impact on the workplace
- Personal biases
- Level of authority

### **Variables, Range of Context**

- Organizational expectations
- Position of individual in organizational structure

### **Manage own stress**

#### **Purpose of the Task**

Strategies to manage one’s own stress are important to ensuring sustained, healthy employment. These strategies prevent burnout and employee turnover. It is important to be realistic about what one person can reasonably take on in terms of workload and timelines

#### **Performance**

- Attend to own personal, physical, emotional and spiritual needs
- Maintain a sense of humour
- Establish a comfortable work environment
- Practice being flexible and adaptable to new situations, e.g. demonstrate calm approach
- Take action to reduce stress, e.g. balance home and work life, set realistic goals, engage in hobbies
- Ask for assistance when needed

#### **Knowledge**

- Personal limitations
- Personal stress indicators and triggers
- How own stress and attitude affects others
- When and how to say “no”

## Variables, Range of Context

- Personality types
- Corporate culture
- Union or non-union work environment
- Position and role of individual

## Manage time

### Purpose of the Task

Time management is critical to effective and efficient achievement of goals. Managing time is one of the skills used to ensure the timely accomplishment of tasks; undue delays in meeting deadlines; and to ensure all tasks get the time and attention they require.

### Performance

- Set achievable short- and long-term objectives
- Develop action plan, break down task into manageable steps
- Prioritize tasks:
  - ✓ set priorities
  - ✓ manage conflicting priorities
- Estimate time requirements
- Schedule tasks:
  - ✓ use time management tools and software applications, e.g. activity logs, to-do lists, action plans
- Monitor progress against projections:
  - ✓ adjust schedule if necessary
  - ✓ delegate some tasks, if applicable
- Keep motivated:
  - ✓ minimize distractions
  - ✓ compensate for personal style, e.g. procrastination, avoidance, perfectionist
- Keep organized, i.e. reduce wasted time looking for materials, keep files organized

### Knowledge

- Time management techniques, e.g. time allocation, prioritizing
- Organization's plans and scheduling
- Time management tools, e.g. critical paths
- New equipment and tools that can save time

## Variables, Range of Context

- Complexity and size of projects
- Interdependence with other personnel's work
- Union or non-union work environment
- Position and role of individual

- Authority to manage own workload will vary by organization

## Communications

### Communicate Effectively

#### Use active listening skills

##### Purpose of the Task

To ensure messages and information are understood and to prevent misunderstandings that could result in costly errors.

##### Performance

- Assess situation and timing/location of potential conversation
- Focus complete attention on speaker:
  - ✓ be open-minded
  - ✓ use attentive body language and verbal cues
  - ✓ demonstrate patience, i.e. listen without interruption until message is completed
- Watch for nonverbal indicators that reinforce or contradict message, e.g. nods
- Respond to speaker:
  - ✓ acknowledge message, e.g. thank speaker
  - ✓ offer comments
  - ✓ use effective questions to seek additional information or clarify details, e.g. open-ended or closed questions, probing or mirror questions
  - ✓ re-word message in paraphrased terms to confirm understanding

##### Knowledge

- Questioning techniques
- Paraphrasing
- Nonverbal cues, i.e. body language
- Culturally sensitive communication styles or practices, e.g. use of humour
- Appropriate listening environments for various conversations

##### Variables, Range of Context

- Barriers to listening, e.g. poor hearing, noisy work environments
- Interpretations of nonverbal cues, i.e. culturally-determined information
- Interpreters or translators may be used if the speakers and listeners have different first languages

#### Use speaking skills

##### Purpose of the Task

To ensure messages and information are understood and to prevent misunderstandings that could result in costly errors.

## Performance

- Determine appropriate time and place to deliver message, e.g. away from noisy equipment
- Respect needs and limitations of listeners:
  - ✓ recognize cultural differences in communication
  - ✓ respect schedule and potential time restrictions
  - ✓ anticipate potential emotional responses
- Organize ideas before speaking
- Determine appropriate format, e.g. formal, informal, group, individual, telephone
- Communicate message:
  - ✓ speak clearly
  - ✓ make eye contact
  - ✓ vary tone, volume, pauses, and rate of speech
  - ✓ use appropriate language, e.g. do not use slang, jargon, profanity or sarcasm
  - ✓ exhibit appropriate non-verbal behaviour
- Engage listeners by promoting input, e.g. put employee at ease
- Confirm listener(s)'s understanding:
  - ✓ encourage and answer questions
  - ✓ watch for nonverbal cues, e.g. questioning looks

## Knowledge

- Purpose of communication
- Speaking techniques
- Nonverbal cues, i.e. body language
- Proper terms for industry/organizational jargon
- Appropriate delivery of message for situation
- Culturally sensitive communication styles and practices

## Variables, Range of Context

- Barriers to listening, e.g. poor hearing, noisy work environments
- Listeners with special needs, e.g. English as a Second Language (ESL), impaired hearing, foreign language audience members
- Interpretations of nonverbal cues
- Personality traits, e.g. shy, soft-spoken, assertive/aggressive
- Emotional states of listeners
- Types of messages, e.g. coaching session, training, positive reinforcement, sharing of information
- Interpreters or translators may be used if the speakers and listeners have different first languages

## 5. GLOSSARY

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**Blanching** - process where a product, like lobster, is scalded in boiling water, removed after a brief, timed interval and the transferred into iced water to halt the process. Crustaceans are not considered cooked after blanching.

**Brine** - to soak or saturate a product, like lobster meat, with salty water.

**Calibrate** - to determine, check, or rectify the graduation of any instrument giving quantitative measurements.

**Changeover time** - period required to prepare a device, machine, process or system to change from producing the last good/product of the batch to producing the first good piece of the new batch. A changeover is different than a set-up, although a changeover can include a set-up.

**Clean-In-Place (CIP)** - A method of cleaning the interior surfaces of pipes, vessels, process equipment, filters and associated fittings, without disassembly.

**Complaints** - consumer complaints about product.

**Critical Control Point (CCP)** - Specific point, procedure, or step in food manufacturing at which control can be exercised to reduce, eliminate, or prevent the possibility of a food safety hazard.

**FIFO (First In, First Out)** - A FIFO warehouse system is an inventory management system in which the first or oldest stock is used first and the stock or inventory that has most recently been produced or received is only used or shipped out until all inventory in the warehouse or store before it has been used or shipped out.

**Glazing** - The application of a protective layer of ice formed at the surface of a frozen product by spraying it with, or dipping it into, clean seawater, potable water or potable water with approved additives.

**Grading** - involves the inspection, assessment and sorting of various foods regarding quality, freshness, legal conformity and market value. Food grading often occurs by hand, in which foods are assessed and sorted. Machinery is also used to grade foods and may involve sorting products by size, shape and quality.

**Hemolymph** - The white congealed substance that appears when lobsters are cooked; hemolymph is the protein substance that lobsters have instead of blood and intestines.

**Muster point** - A muster point is a designated place or an area where all employees, passengers, or a large crowd assemble in case of an emergency in an installation, building, public place or a watercraft. It is also known as an emergency assembly point (EAP), or, simply, assembly or gathering point.

**Policy** - A written statement that clearly indicated the position and values of the organization on a specific topic. It contains rules and stipulates what to do.

**Primary packaging** - Packaging material that is direct contact with the food product, e.g. sealed bag that holds dry cereal.

**Product Returns** - ability to record and track returned products and reason for return by consumers.

**Recall** - an action taken by an organization to remove potentially unsafe food products or products from the market that do not comply with relevant laws. It is the responsibility of organization to remove the product from sale or distribution.

**Recovery CIP** - cleaning solutions used in CIP is not very dirty after one cleaning cycle, and can be reused in the CIP process.

**Roe** - unfertilized eggs found within the body cavity and tail of a female lobster.

**Salinometer** - A device designated to measure the salinity, or dissolved salt content, of a solution. Also known as a 'brine tester.'

**Secondary packaging** - Packaging material that holds the food product in its primary packaging, e.g. printed box that contains the sealed bag of dry cereal.

**Single-use CIP** - cleaning solutions used in CIP and immediately disposed of after use.

**Standard Operating Procedure (SOP)** – A written set of instruction that describes how to perform the required steps for a particular task or sequence of tasks.

**Stakeholder** - anyone that can be affected by a company's actions, objectives, and policies. This includes both internal stakeholders, such as employees and managers, and external stakeholders, such as shareholders, suppliers, customers, surrounding communities, creditors, government representatives, etc.

**Thorax** - Part of the lobster anatomy located between the head and the tail. Together, the head and the thorax of the lobster (i.e. the cephalothorax) are often referred to as the 'body' of the lobster.

**Traceability** - The ability to trace and follow raw materials, components and products, through all stages of receipt, production, processing and distribution, both forwards and backwards.

**WHMIS** - The short form for Workplace Hazardous Materials Information System. It is a comprehensive plan for providing information on the safe use of hazardous materials used in Canadian workplaces. Information is provided by means of product labels, safety data sheets (SDS) and worker education programs.



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